

Service Manual

 **PIONEER®**
The Art of Entertainment

ORDER NO.
CRT1455

CASSETTE CAR STEREO WITH FM/AM ELECTRONIC TUNER

KEH-380QR US

- This additional service manual is designed to be used together with Model KEH-3200QR/UC Service Manual (CRT1426). Refer to it for finding parts numbers and adjustment, etc. which are not shown in this manual.

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- The KEH-380QR/US Parts List enumerates the parts which differ from those for the KEH-3200QR/UC only.
The parts other than those enumerated in the KEH-380QR/US Parts List are identical with those in the KEH-3200QR/UC Parts List, to which you are requested to refer, accordingly.

EXPLODED VIEW

- Parts List (Page 60)

Mark No.	Description	KEH-3200QR/UC	KEH-380QR/US
		Part No.	Part No.
14	Button(1—6)	CAC2693	CAC2762
15	Grille Unit	CXA4459	CXA4731
⑥ 60	Tuner Amp Assy	CWM2903	CWM3012

PACKING METHOD

- Parts List (Page 73)

Mark No.	Description	KEH-3200QR/UC	KEH-380QR/US
		Part No.	Part No.
1	Carton	CHG2110	CHG2193
2-1	Owner's Manual	CRD1571	CRB1243
6	Contain Box	CHL2110	CHL2193

2-1 Owner's Manual

Part No.	Model	Language
CRB1243	KEH-380QR/US	English
CRD1571	KEH-3200QR/UC	English, French, Spanish

ELECTRICAL PARTS LIST

NOTE:

- Parts whose parts numbers are omitted are subject to being not supplied.
- The part numbers shown below indicate chip components.

Chip Resistor

RS1/□□□□□J, RS1/□□□□□J

Chip Capacitor (except for CQS.....)

CKS....., CCS....., CSZS.....

Tuner Amp Unit
Consists of
Tuner Amp P.C.Board
Volume P.C.Board
Dolby NR P.C.Board

Unit Number :
Unit Name : Tuner Amp Unit

MISCELLANEOUS

====Circuit Symbol & No. Part	Name=====	Part No.
IC 1	LA1883M	
IC 251	LA3161P	
IC 401	AN6263N	
IC 451	NJM2068D	
IC 551	TA8215H-A	
IC 801	NJM2068D	
IC 951	PD4275	
Q 1	3SK195	
Q 2	2SC2999	
Q 3	2SA1309A	
Q 151	2SC2412K	
Q 152	DTA124EK	
Q 153	DTC114EK	
Q 201	2SK435	
Q 202	2SC1740S	
Q 251	2SD1992A	
Q 401 402	DTC124ES	
Q 451 452 453 454	2SC1740S	
Q 455 456	DTC343TS	
Q 457 458	DTC323TK	
Q 459	DTA144TK	
Q 460 951	UN4219	
Q 502	2SK330	
Q 503 522	2SC1740S	
Q 551	DTC114EK	
Q 801	DTA144EK	
Q 803 804	DTC323TK	
Q 911	2SD1684	
Q 912	2SA1150	
Q 913	DTC143ES	
Q 952	XDA124ES	
D 1	1SV128A-BB	
D 2 3 4	Variable Capacitance Diode	
D 5	MA157-MR	
D 151	HZS4R3EB3	
D 201 202 203 204	Variable Capacitance Diode	
D 205	KV1235Z3	
D 251	1SS133	
D 252 911	HZS9R1JB2	
D 451 452 453 454 456 457 458 459 462	1SS133	

====Circuit Symbol & No. Part	Name=====	Part No.
D 460	MA700	
D 461	RD4R7JSB2	
D 501	RD3R0ESB2	
D 901	ERC04-02F	
D 902	ERA15-02Y1	
D 954 956 958 959 960 962 963	1SS133	
D 961	HZS5R6JB2	
D 964	MA700	
D 965	RD5R1JSB2	
D 967	RD8R2JSB1	
L 1	Inductor	CTF1065
L 2	Coil	CTC1022
L 3	Coil	CTC1020
L 4	Coil	CTC1056
L 5	OSC Coil	CTC1024
L 6	Inductor	LAU150K
L 201	Ferri-Inductor	LAU4R7K
L 202	Ferri-Inductor	LAU330K
L 203	Ferri-Inductor	CTF-161
L 951	Ferri-Inductor	LAU101K
T 1	Coil	CTC1064
T 51	Coil	CTC1071
T 201	Coil	CTB1056
T 202	Coil	CTB1008
T 203 204	Coil	CTB1058
T 205	Coil	CTE1041
T 206	Coil	CTE1042
T 210	Coil	CTB1061
CF 1	Ceramic Filter	CTF-182
CF 51 52	Ceramic Filter	CTF1130
CF 201	Filter	CTF1085
H 1	Surge Protector	DSP-201M
X 151	Ceramic Resonator	CSS1066
X 951	Crystal Resonator	CSS1077
VR 151	Semi-fixed 150k Ω (B)	VRMB6VS154
VR 152	Semi-fixed 33k Ω (B)	VRMB6VS333
VR 451 452	Volume 20k Ω (U)	CCS1164
VR 453	Volume/Switch 20k Ω (B), 50k Ω (G), 200 Ω	CCS1193
B 951	Battery	CEX1012
	LCD	CAW1162

RESISTORS

====Circuit Symbol & No. Part	Name=====	Part No.
R 1 3 5		RS1/10S223J
R 2		RD1/4PS151JL
R 4 159		RS1/10S333J
R 6		RD1/4PS473JL
R 8		RS1/10S563J
R 9		RD1/4PS563JL
R 10 157 160		RS1/10S103J
R 13		RD1/4PS271JL
R 14		RS1/10S561J
R 15		RS1/10S683J

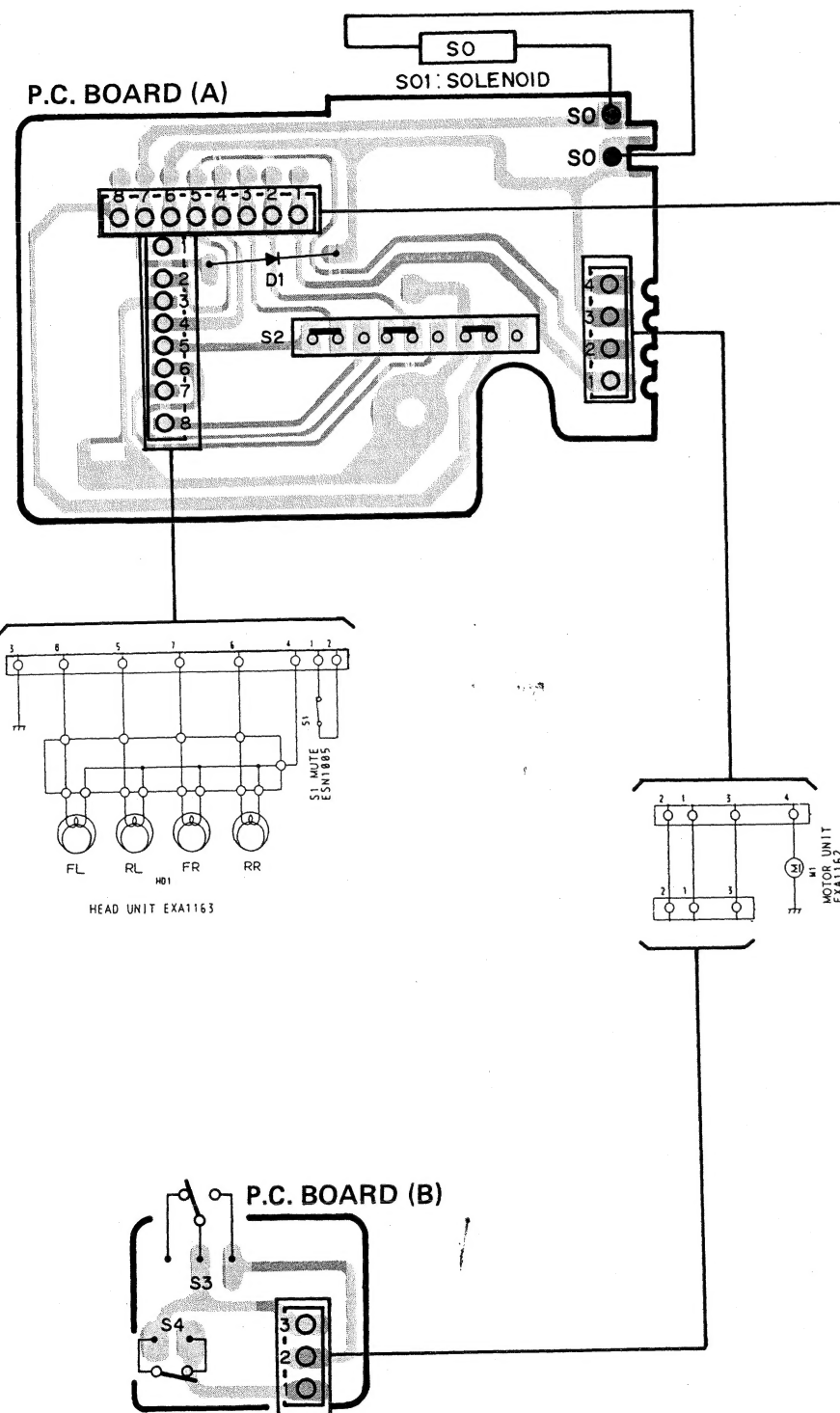
====Circuit Symbol & No. Part	Name=====	Part No.
R 16		RS1/10S474J
R 17		RS1/8S271J
R 18 51		RS1/10S331J
R 20 155		RS1/10S182J
R 21		RS1/10S101J
R 22		RS1/10S223J
R 23		RD1/4PS472JL
R 24		RD1/4PS682JL
R 25		RS1/10S472J
R 26		RD1/4PS103JL
R 27		RS1/10S510J
R 28 59		RS1/10S0R0J
R 52		RD1/4PS333JL
R 53		RD1/4PS104JL
R 54		RD1/4PS153JL
R 55 102 104		RS1/10S682J
R 56		RD1/4PS562JL
R 57		RS1/10S473J
R 58		RS1/10S513J
R 101		RS1/10S133J
R 103		RS1/10S183J
R 105		RS1/10S752J
R 153		RD1/4PS562JL
R 154		RS1/10S332J
R 156		RS1/10S684J
R 158		RS1/10S822J
R 201 202 211		RS1/10S103J
R 203		RD1/4PS513JL
R 204 219		RD1/4PS103JL
R 205		RS1/10S561J
R 210		RS1/10S473J
R 220		RD1/4PS752JL
R 221		RS1/10S104J
R 222		RD1/4PS220JL
R 223		RS1/10S472J
R 224		RS1/10S0R0J
R 251 252		RS1/10S513J
R 255 256		RS1/10S750J
R 257 258		RS1/10S472J
R 259 260		RS1/10S104J
R 262		RS1/10S222J
R 263		RS1/8S0R0J
R 264		RS1/10S0R0J
R 351 352 355		RD1/4PS102JL
R 353 354		RD1/4PS153JL
R 401 402		RS1/10S472J
R 403		RS1/10S684J
R 404		RS1/10S510J
R 405		RD1/4PS103JL
R 407		RS1/10S0R0J
R 451 452 479		RS1/10S473J
R 453 454 465 466		RS1/10S331J
R 455		RD1/4PS182JL
R 456		RS1/10S182J
R 457		RD1/4PS222JL
R 458 477 478		RS1/10S222J
R 459 460		RS1/10S333J
R 461 462		RS1/10S474J
R 463 464		RS1/8S122J
R 467 468		RD1/4PS433JL
R 469 470		RS1/10S102J
R 471 472		RS1/10S123J
R 473 474		RS1/10S332J
R 475 476		RS1/10S183J
R 480		RD1/4PS104JL

====Circuit Symbol & No. Part	Name=====	Part No.	====C
R 481		RD1/4PS222JL	C 103
R 482		RD1/4PS392JL	C 104
R 483 484		RS1/10S561J	C 106
R 487		RS1/10S0R0J	C 151
R 489		RS1/10S563J	C 153
R 490		RS1/10S0R0J	C 155
R 491		RS1/10S273J	C 158
R 492		RS1/8S0R0J	C 159
R 493		RS1/10S472J	C 161
R 501 955 966		RD1/4PS472JL	C 162
R 503 506		RD1/4PS102JL	C 202
R 504		RS1/10S472J	C 203
R 505		RD1/4PS152JL	C 204
R 551 552		RS1/10S152J	C 205
R 553 554		RS1/10S123J	C 206
R 555 556		RS1/10S471J	C 207
R 557 558 559 560		RD1/4PS47JL	C 208
R 561		RS1/10S102J	C 217
R 562		RD1/4PS222JL	C 218
R 801 805 806		RS1/10S392J	C 222
R 802		RS1/10S472J	C 224
R 803 804		RS1/10S223J	C 225
R 807 808 811 812		RS1/10S153J	C 228
R 809 810		RS1/10S751J	C 231
R 901		RD1/2PS3R3JL	C 251
R 911 964		RD1/4PS331JL	C 253
R 912		RD1/4PS221JL	C 255
R 913		RS1/10S103J	C 256
R 914 965		RS1/10S222J	C 257
R 951		RS1P151JL	C 261
R 953		RS1/10S331J	C 262
R 956		RD1/4PS474JL	C 351
R 959		RS1/10S223J	C 353
R 960		RD1/4PS222JL	C 401
R 961		RD1/4PS333JL	C 402
R 962		RD1/4PS473JL	C 403
R 963		RD1/4PS103JL	C 404
R 967		RS1/10S0R0J	C 451
R 969		RS1/10S2R2J	C 453
R 970		RS1/8S0R0J	C 455
CAPACITORS			
C 1 3 56		CCSQCH220J50	C 457
C 2 53 58		CKSQYF473Z50	C 459
C 4 25		CCSQCH330J50	C 461
C 5		CCSQTH090D50	C 463
C 6		CCSQTH070D50	C 468
C 7		CKSQYB222K50	C 469
C 8 22 51 54 59 105 154		CKSQYB223K50	C 471
C 9		CCSQTH150J50	C 473
C 10		CCSQSL271J50	C 475
C 11 19 101 164 201 502		CKSQYB103K25	C 478
C 12 24		CCSQCH470J50	C 503
C 13		CEA3R3M25LS	C 551
C 14		CKSQYB102K50	C 553
C 15		CCSQCH080D50	C 555
C 16		CCSQCH100D50	C 557
C 17		CCSQCH330J50	C 561
C 18		CCSQCH150J50	C 562
C 20		CKSQYF104Z25	C 801
C 21		CKSYB393K25	C 803
C 23		CKSYB393K25	C 805
C 27 52		CEA101M10LS	C 807
C 55		CEA010M50LS2	C 901
C 57		CEAR47M50LS2	C 902
C 61		CKSYB473K50	C 903
C 102		CEA470M16LS	C 911

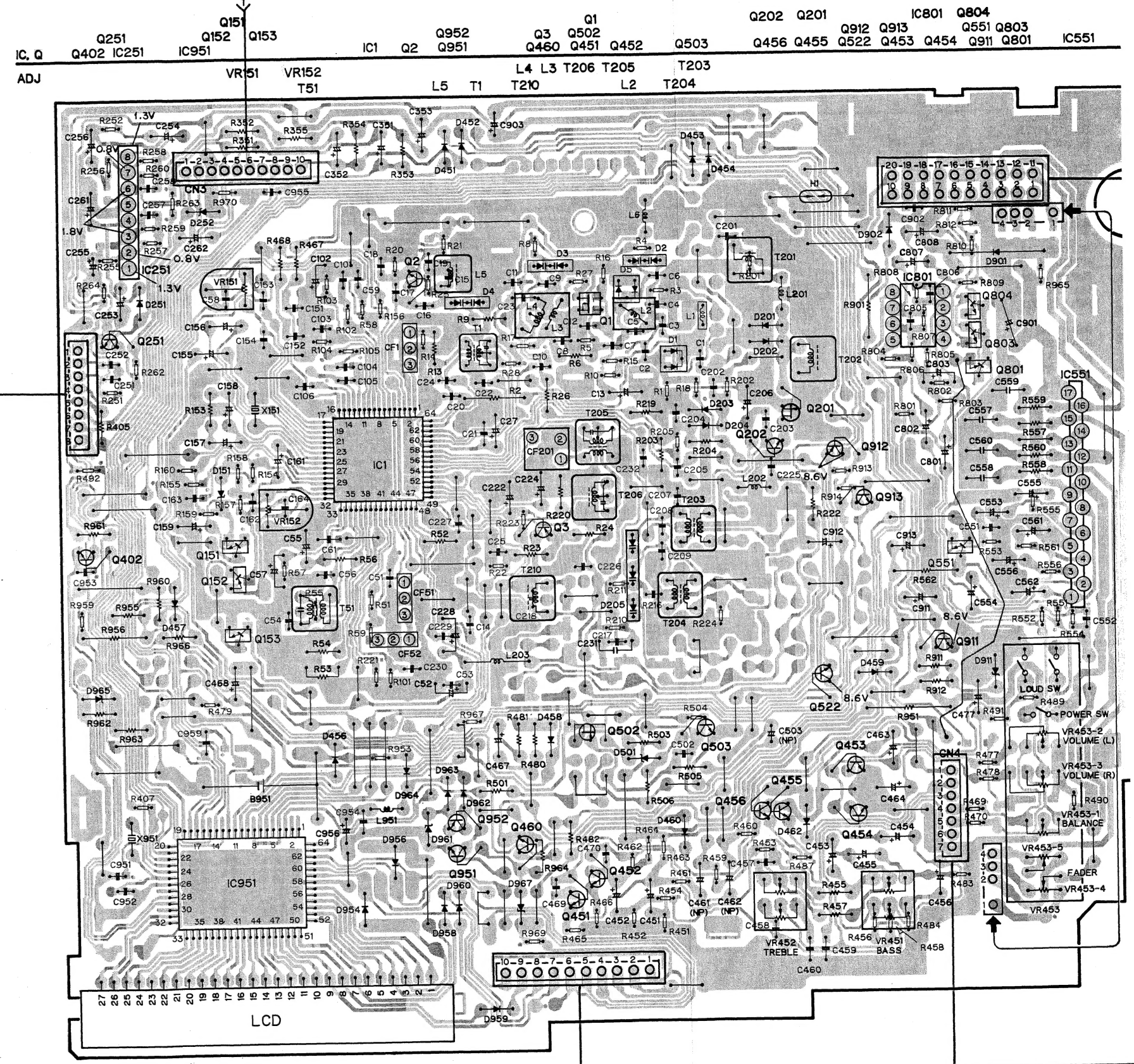
Part No.	====Circuit Symbol & No. Part	Name=====	Part No.
RD1/4PS222JL	C 103		CKSQYB182K50
RD1/4PS392JL	C 104		CKSQYB682K50
RS1/10S561J	C 106		CKSQYB222K50
RS1/10S0R0J	C 151 152		CKSQYB223K50
RS1/10S563J	C 153		CKSQYB332K50
RS1/10S0R0J	C 155 156 157		CEA010M50LS2
RS1/10S273J	C 158		CEAR22M50LS2
RS1/8S0R0J	C 159		CEA0R1M50LS2
RS1/10S472J	C 161		CEA100M16LS2
RD1/4PS472JL	C 162 163		CKSQYB152K50
RD1/4PS102JL	C 202		CKSQYB222K50
RS1/10S472J	C 203		CCSQCH220J50
RD1/4PS152JL	C 204 216 227 229 230		CKSQYB223K50
RS1/10S152J	C 205 226		CKSQYF473Z50
RS1/10S123J	C 206		CEA470M16LS
RS1/10S471J	C 207 209		CCSQTH090D50
RD1/4PS4R7JL	C 208		CCSQCH010C50
RS1/10S102J	C 217		CCSQRH820J50
RD1/4PS222JL	C 218		CCSQUJ180J50
RS1/10S392J	C 222		CEAR47M50LS2
RS1/10S472J	C 224		CEA3R3M25LS
RS1/10S223J	C 225 232		CKSQYB473K25
RS1/10S153J	C 228		CEA220M16LS
RS1/10S751J	C 231		CQPA431G2A
RD1/2PS3R3JL	C 251 252		CKSQYB821K50
RD1/4PS331JL	C 253 254		CEA2R2M50LS2
RD1/4PS221JL	C 255		CEA470M10LS
RS1/10S103J	C 256		CEA470M10L2
RS1/10S222J	C 257 258		CKSQYB333K50
RS1P151JL	C 261		CEA221M10L2
RS1/10S331J	C 262		CEA101M10L2
RD1/4PS474JL	C 351 352		CEA100M16L2
RS1/10S223J	C 353		CEA4R7M35L2
RD1/4PS222JL	C 401		CKSQYB103K25
RD1/4PS333JL	C 402		CCSQCH330J50
RD1/4PS473JL	C 403		CEA330M10LS
RD1/4PS103JL	C 404		CEA0R1M50LS2
RS1/10S0R0J	C 451 452 467 477		CEA100M16LS2
RS1/10S2R2J	C 453 454		CEA0R1M50LS2
RS1/8S0R0J	C 455 456		CEAR47M50LS2
CCSQCH220J50	C 457 458		CKSQYB153K50
CKSQYF473Z50	C 459 460		CKSYB393K25
CCSQCH330J50	C 461 462		CEALNP2R2M35
CCSQTH090D50	C 463 464		CEAR22M50L2
CCSQTH070D50	C 468		CEA010M50LS2
CKSQYB222K50	C 469 470		CCSQCH330J50
CKSQYB223K50	C 471 472		CEA4R7M35LS
CCSQTH150J50	C 473 474		CCSQCH101J50
CCSQL271J50	C 475 476		CEA2R2M50LS2
CKSQYB103K25	C 478		CEA470M10L2
CCSQCH470J50	C 503	4.7 μ F/16V	CCH1005
CEA3R3M25LS	C 551 552		CKSQYB102K50
CKSQYB102K50	C 553 554		CEHAQ4R7M50
CCSQCH080D50	C 555 556		CEHAQ470M25
CCSQCH100D50	C 557 558 559 560		CFTNA224J50
CCSQCH330J50	C 561		CEHAQ220M50
CCSQCH150J50	C 562		CEHAQ101M10
CKSQYF104Z25	C 801 802		CEA2R2M50LS2
CKSYB393K25	C 803		CEA470M10L2
CKSYB393K25	C 805 806		CCSQCH101J50
CEA101M10LS	C 807 808		CEA100M16LS2
CEA010M50LS2	C 901		CEHAQ472M16
CEAR47M50LS2	C 902		CKSQYF473Z50
CKSYB473K50	C 903		CEA102M16L2
CEA470M16LS	C 911 913	330 μ F/10V	CCH1128

====Circuit Symbol & No. Part	Name=====	Part No.
C 912		CEA101M10LS
C 951 952		CCSQCH100D50
C 953		CKSQYF473Z50
C 954		CKSYB473K50
C 955		CKSQYB223K50
C 956		CEA331M6R3L2
C 959		CKSYB223K50
Unit Number :		
Unit Name : Key Board Unit		
IL 901 902	Lamp 14V40mA	CEL1191
IL 903	Lamp 14V40mA	CEL1169
Unit Number :		
Unit Name : P.C.Board(A)		
S 2	Switch(FWD/REV)	ESH1003
D 1		1SR-35-100A
Unit Number :		
Unit Name : P.C.Board(B)		
S 3	Switch(TAPE/TUN)	ESH1004
S 4	Switch(MUTE)	CSN1005
Miscellaneous Parts List		
S 1	Switch(MUTE)	ESN1005
M 1	Motor Unit	EXA1162
HD 1	Head Assy	EXA1163
SO 1	Solenoid	EXP1010

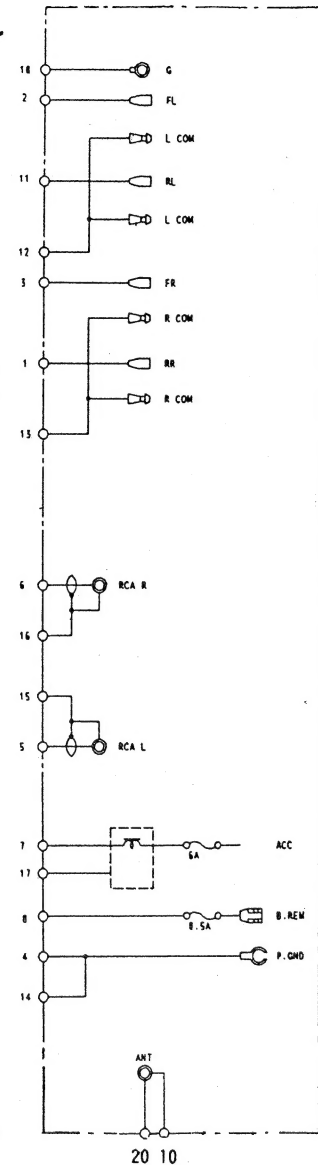
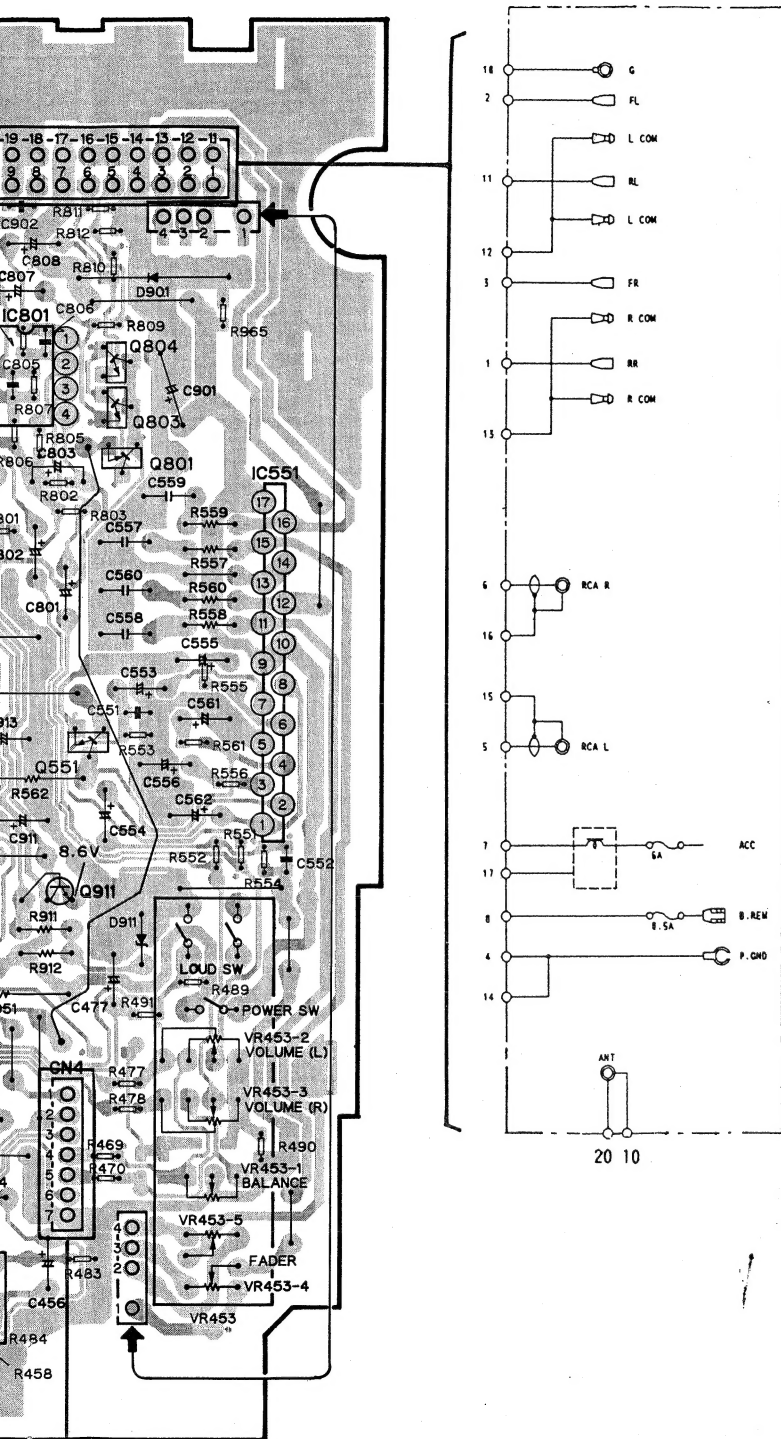
CONNECTION DIAGRAM



TUNER AMP P.C.BOARD



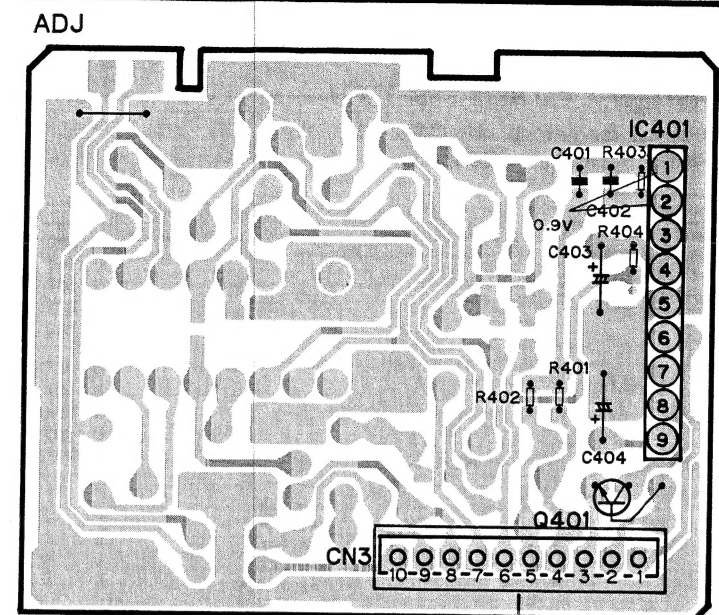
IC801 Q804
13 Q551 Q803
53 Q454 Q911 Q801 IC551



IC1			
PIN NO.	VOLTAGE	PIN NO.	VOLTAGE
1	2.1V	41	1:3V
6	5.2V	44	2.4V/0V
8	2.9V	46	3.3V/0V
11-13	4.8V	47	4V/5.2V
14	2.8V	51	0.2V
16, 17	2.3V	52	0V/6.9V
18	4.7V	53	4.9V/0V
20-22	3.5V	54	8.7V
23	3.8V	55	0V/2.2V
24, 25	3.5V	56	0V/4.3V
26	4.8V	58	3.4V/0V
28	0V/4.1V	59-62	8.6V/0V
29	0V/3.5V		
31	0V/6.4V		
32	3.4V		

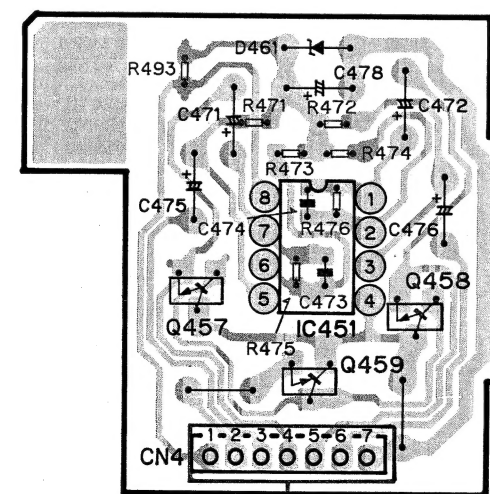
DOLBY NR P.C.BOARD

IC, Q IC401 Q401



VOLUME P.C.BOARD

IC, Q Q457 IC451 Q459 Q458



KEY BOARD UNIT

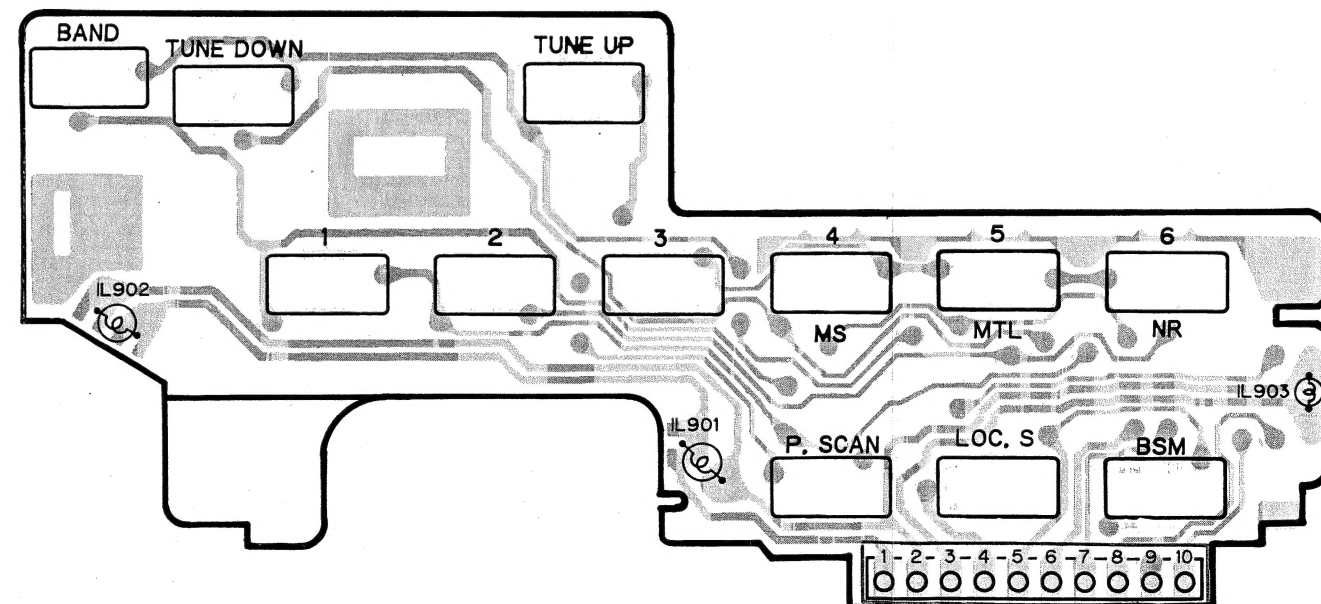
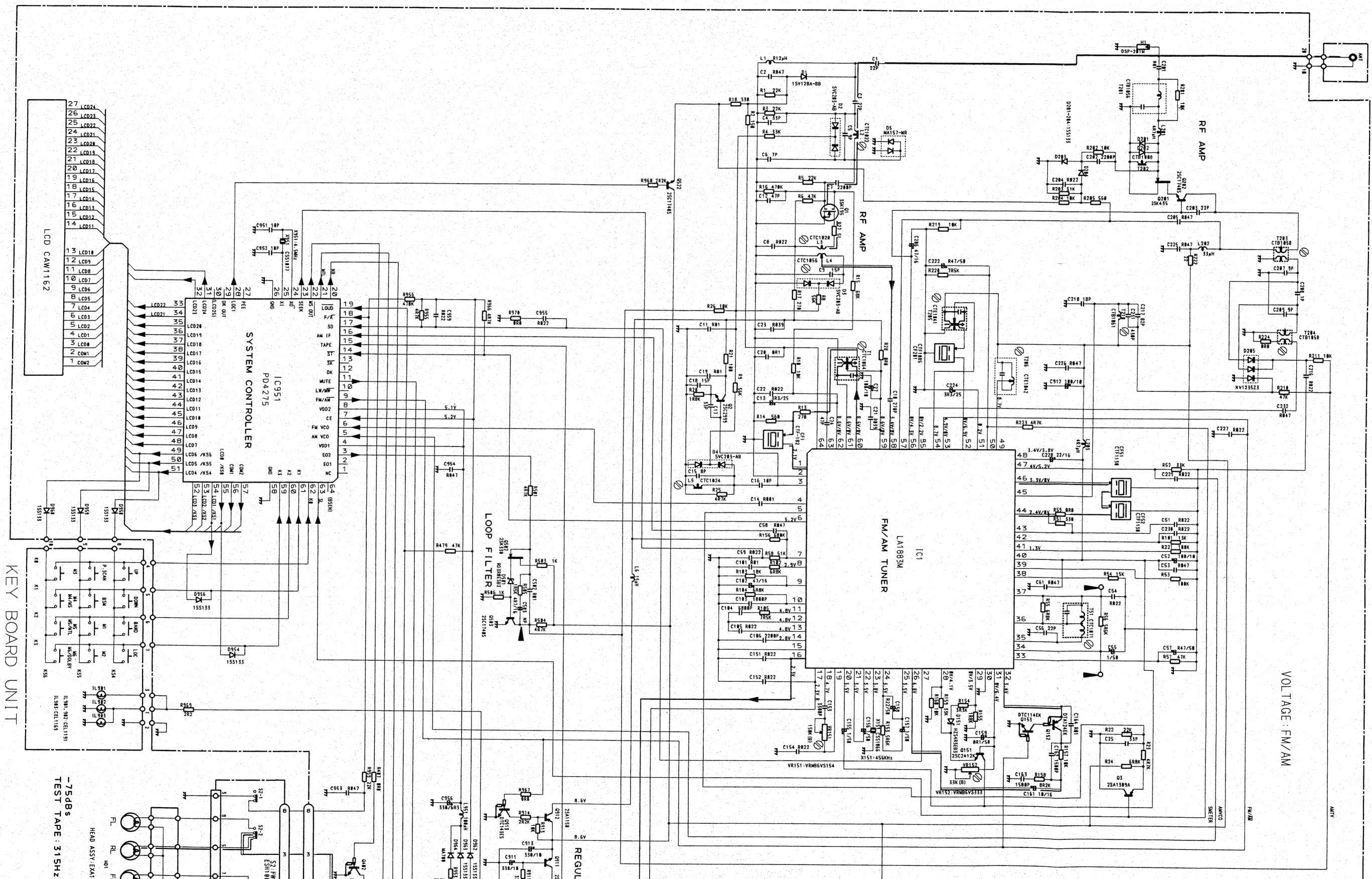


Fig. 1

SCHEMATIC CIRCUIT DIAGRAM

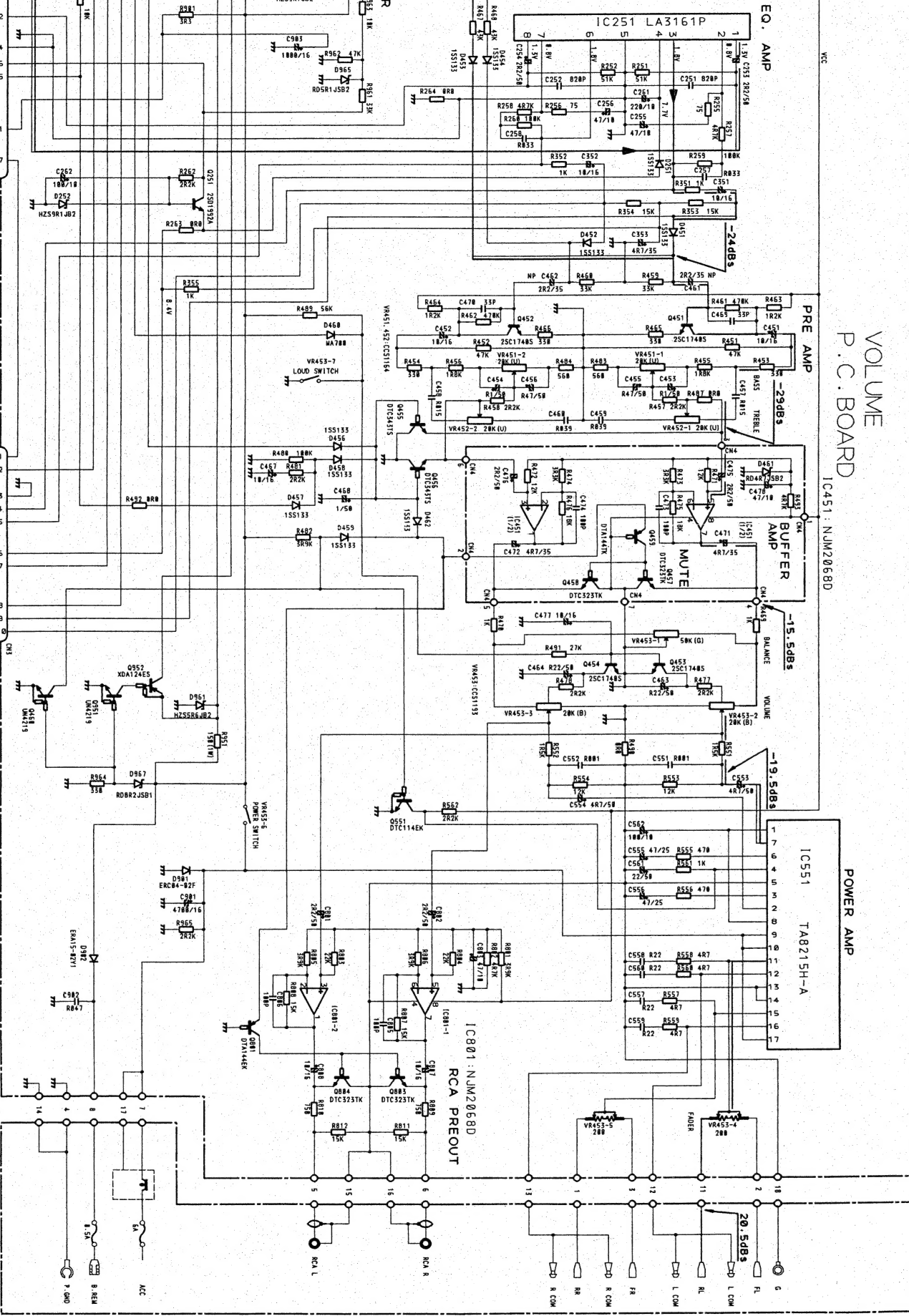


NOTE:
□ Symbol indicates a resistor.
No differentiation is made between chip resistors and discrete resistors.
+ Symbol indicates a capacitor.
No differentiation is made between chip capacitors and discrete capacitors.

Decimal points for resistor and capacitor fixed values are expressed as:
2.2-2R2
0.022-R022

TUNER AMP UNIT
Consists of
● TUNER AMP P.C. BOARD
● VOLUME P.C. BOARD
● DOLBY NR P.C. BOARD

TUNER AMP P.C. BOARD



P.C. BOARD (B)

DOLBY NR P.C. BOARD

P.C. BOARD (A)

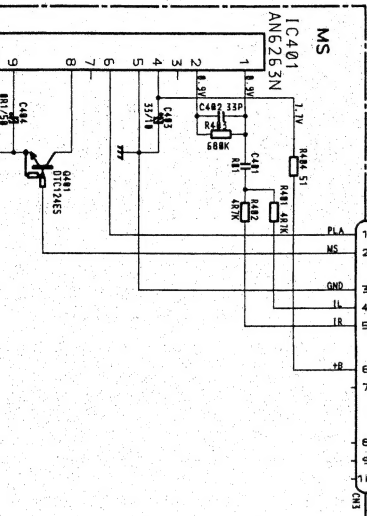


Fig. 2

4033

Service Manual

PIONEER
The Art of Entertainment

• KEH-3200QR/UC



ORDER NO.
CRT1426

CASSETTE CAR STEREO WITH FM/AM ELECTRONIC TUNER

KEH-3200QR	UC
KEH-2200QR	UC
KEH-3250QR	ES
KEH-2250QR	ES
KEH-1250	ES

Note:

- See the separate manual CX-197 (CRT1328) for the cassette mechanism description.
- Dolby noise reduction manufactured under license from Dolby Laboratories Licensing Corporation. "Dolby" and the double-D symbol are trademarks of Dolby Laboratories Licensing Corporation.
- Whenever a cord assembly may be used for repairing, do not fail to employ the cord assembly designed for the related part.
Do not apply any cord assembly designed for a different part.

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SAFETY INFORMATION (UC MODEL)

CAUTION

This service manual is intended for qualified service technicians; it is not meant for the casual do-it-yourselfer. Qualified technicians have the necessary test equipment and tools, and have been trained to properly and safely repair complex products such as those covered by this manual.

Improperly performed repairs can adversely affect the safety and reliability of the product and may void the warranty. If you are not qualified to perform the repair of this product properly and safely, you should not risk trying to do so and refer the repair to a qualified service technician.

WARNING

Lead in solder used in this product is listed by the California Health and Welfare agency as a known reproductive toxicant which may cause birth defects or other reproductive harm (California Health & Safety Code, Section 25249.5). When servicing or handling circuit boards and other components which contain lead in solder, avoid unprotected skin contact with the solder. Also, when soldering do not inhale any smoke or fumes produced.

1. SPECIFICATIONS

● KEH-3200QR, KEH-2200QR

General	
Power source	14.4 V DC (10.8 – 15.6 V allowable)
Grounding system	Negative type
Max. current consumption	7.0 A
Dimensions (chassis)	178(W) × 50(H) × 141(D) mm [7(W) × 2(H) × 5-1/2(D) in.]
(nose)	188(W) × 58(H) × 16(D) mm [7-3/8(W) × 2-1/4(H) × 5/8(D) in.]
(mounting bracket)	182(W) × 52(H) × 152.5(D) mm [7-1/8(W) × 2(H) × 6(D) in.]
Weight	1.4 kg (3.1 lbs.)
Amplifier	
Continuous power output is 10 W per channel min. into 4 ohms, both channels driven 50 to 15,000 Hz with no more than 5% THD.	25 W × 2/15 W × 4 (EIAJ)
Maximum power output	4 Ω (4 – 8 Ω allowable)
Load impedance	500 mV/100 Ω
Preout output level/impedance	±10 dB (100 Hz)
Tone controls (bass)	±10 dB (10 kHz)
(treble)	±10 dB (10 kHz)
Loudness contour	+8 dB (100 Hz) (volume: -30 dB)
Tape player	
Tape	Compact cassette tape (C-30 – C-90)
Tape speed	4.76cm/sec. (+0.14cm/sec., -0.05cm/sec.)
Fast forward/rewind time	Approx. 100 sec. for C-60
Wow & flutter	0.13% (WRMS)
Frequency response (KEH-3200QR)	Metal: 40 – 17,000 Hz (±3 dB)
(KEH-2200QR)	40 – 14,000 Hz (±3 dB)
Stereo separation	45 dB
Signal-to-noise ratio	
(KEH-3200QR)	Metal: Dolby B NR IN: 63 dB (IHF-A network)
(KEH-2200QR)	Dolby NR OUT: 55 dB (IHF-A network)
	52 dB (IHF-A network)
FM tuner	
Frequency range	87.9 – 107.9 MHz
Usable sensitivity	11 dBf (1.0 μV/75 Ω, mono, S/N: 30 dB)
50 dB quieting sensitivity	16 dBf (1.7 μV/75 Ω, mono)
Signal-to-noise ratio	70 dB (IHF-A network)
Distortion	0.3% (at 65 dBf, 1 kHz, stereo)
Frequency response	30 – 15,000 Hz (±3 dB)
Stereo separation	40 dB (at 65 dBf, 1 kHz)
Selectivity	70 dB (2ACA) (±400 kHz)
Three-signal intermodulation (desire signal level)	
(KEH-3200QR)	50 dBf (two undesire signal level: 110 dBf)
(KEH-2200QR)	55 dBf (two undesire signal level: 110 dBf)
AM tuner	
Frequency range	530 – 1,710 kHz
Usable sensitivity	18 μV (25 dB) (S/N: 20 dB)
Selectivity	50 dB (±10 kHz)

These specifications were determined and are presented in accordance with specification standards established by the Ad Hoc Committee of Car Stereo Manufacturers.

Note:
Specifications and the design are subject to possible modification without notice due to improvements.

● KEH-3250QR, KEH-2250QR

General	
Power source	14.4 V DC (10.8 – 15.6 V allowable)
Grounding system	Negative type
Max. current consumption	7.0 A
Dimensions (chassis)	178(W) × 50(H) × 141(D) mm (nose) 188(W) × 58(H) × 16(D) mm (mounting bracket) 182(W) × 52(H) × 152.5(D) mm
Weight	1.4 kg
Amplifier	
Continuous power output is 10 W per channel min. into 4 ohms, both channels driven 50 to 15,000 Hz with no more than 5% THD.	25 W × 2/15 W × 4 (EIAJ)
Maximum power output	11 W × 2 (1% dist. at 1 kHz)
Load impedance	4 Ω (4 – 8 Ω allowable)
Preout output level/impedance (KEH-3250QR)	500 mV/100 Ω
Tone controls (bass)	±10 dB (100 Hz)
(treble)	±10 dB (10 kHz)
Loudness contour	+8 dB (100 Hz) (volume: -30 dB)
Tape player	
Tape	Compact cassette tape (C-30 – C-90)
Tape speed	4.76cm/sec. (+0.14cm/sec., -0.05cm/sec.)
Fast forward/rewind time	Approx. 100 sec. for C-60
Wow & flutter	0.13% (WRMS)
Frequency response (KEH-3250QR)	Metal: 40 – 17,000 Hz (±3 dB)
(KEH-2250QR)	40 – 14,000 Hz (±3 dB)
Stereo separation	45 dB
Signal-to-noise ratio	
(KEH-3250QR)	Metal: Dolby B NR IN: 63 dB (IEC-A network)
(KEH-2250QR)	Dolby NR OUT: 55 dB (IEC-A network)
	52 dB (IEC-A network)
FM tuner	
Frequency range	87.5 – 108 MHz
Usable sensitivity	11 dBf (1.0 μV/75 Ω, mono, S/N: 30 dB)
50 dB quieting sensitivity	16 dBf (1.7 μV/75 Ω, mono)
Signal-to-noise ratio	70 dB (IEC-A network)
Distortion	0.3% (at 65 dBf, 1 kHz, stereo)
Frequency response	30 – 15,000 Hz (±3 dB)
Stereo separation	40 dB (at 65 dBf, 1 kHz)
AM tuner	
Frequency range	531 – 1,602 kHz (9 kHz)
Usable sensitivity	530 – 1,710 kHz (10 kHz)
Selectivity	18 μV (25 dB) (S/N: 20 dB)
	50 dB (±9 kHz)
	50 dB (±10 kHz)

Note:
Specifications and the design are subject to possible modification without notice due to improvements.

● KEH-1250

General

Power source	14.4 V DC (10.8 — 15.6 V allowable)
Grounding system	Negative type
Max. current consumption	7.0 A
Dimensions (chassis)	178(W) × 50(H) × 147.5(D) mm
(nose)	170(W) × 46(H) × 12(D) mm
Weight	1.3 kg

Amplifier


Continuous power output is 10 W per channel min. into 4 ohms, both channels driven 50 to 15,000 Hz with no more than 5% THD.
 Maximum power output 25 W × 2/15 W × 4 (EIAJ)
 Continuous power output 11 W × 2 (1% dist. at 1 kHz)
 Load impedance 4 Ω (4 — 8 Ω allowable)
 Loudness contour +8 dB (100 Hz)
 (volume: -30 dB)

Tape player

Tape Compact cassette tape (C-30 — C-90)
 Tape speed 4.76cm/sec. (+ 0.14cm/sec., - 0.05cm/sec.)
 Fast forward/rewind time Approx. 100 sec. for C-60
 Wow & flutter 0.13% (WRMS)
 Frequency response 40 — 14,000 Hz (±3 dB)
 Stereo separation 45 dB
 Signal-to-noise ratio 52 dB (IEC-A network)

● Features

● KEH-3200QR, KEH-2200QR

- Built-in highly sensitive "Super Tuner" for automatic control of stereo separation, muting and frequency characteristics to match the strength of the FM signal.
- The Best Stations Memory automatically memorizes the six best (strongest) stations in the six preset buttons in the order of their strength.
- Preset scan tuning for sequential recall of preset frequencies.
- Auto reverse function eliminates the need to turn the cassette over and allows uninterrupted playback.
- Built-in Dolby B NR for reduced tape hiss.
(This feature is provided for the KEH-3200QR.)
- Music search function allows automatic playback from the beginning of the selection being played or the beginning of the next selection.
(This feature is provided for the KEH-3200QR.)
- 25 W × 2 maximum output for sound with power to spare. Combination with separately available power amp unit allows configuration of a powerful 4-speaker system.
- The "Quick Release Mounting Bracket", facilitates mounting and dismounting of the car stereo and serves to protect the unit from theft.
- Dolby noise reduction manufactured under license from Dolby Laboratories Licensing Corporation.
"DOLBY" and the double-D symbol  are trademarks of Dolby Laboratories Licensing Corporation.

● KEH-3250QR, KEH-2250QR

- Built-in highly sensitive "Super Tuner" for automatic control of stereo separation, muting and frequency characteristics to match the strength of the FM signal.
- The Best Stations Memory automatically memorizes the six best (strongest) stations in the six preset buttons in the order of their strength.
- Preset scan tuning for sequential recall of preset frequencies.
- Auto reverse function eliminates the need to turn the cassette over and allows uninterrupted playback.

FM tuner


Frequency range	87.5 — 108 MHz
Usable sensitivity	11 dBf (1.0 μV/75 Ω, mono, S/N: 30 dB)
50 dB quieting sensitivity	16 dBf (1.7 μV/75 Ω, mono)
Signal-to-noise ratio	70 dB (IEC-A network)
Distortion	0.3% (at 65 dBf, 1 kHz, stereo)
Frequency response	30 — 15,000 Hz (±3 dB)
Stereo separation	40 dB (at 65 dBf, 1 kHz)

AM tuner

Frequency range	531 — 1,602 kHz (9 kHz)
	530 — 1,710 kHz (10 kHz)
Usable sensitivity	18 μV (25 dB) (S/N: 20 dB)
Selectivity	50 dB (±9 kHz)
	50 dB (±10 kHz)

Note:

Specifications and the design are subject to possible modification without notice due to improvements.

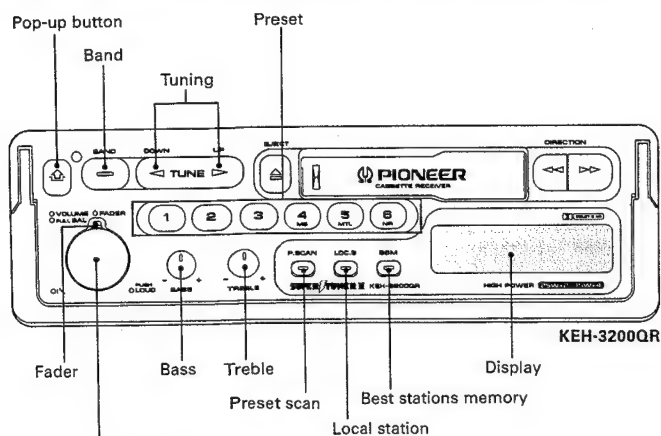
- Built-in Dolby B NR for reduced tape hiss.
(This feature is provided for the KEH-3250QR.)
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● KEH-1250

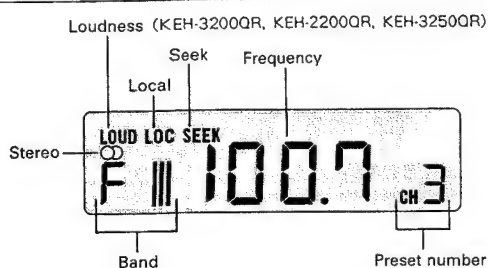
- Built-in highly sensitive "Super Tuner" for automatic control of stereo separation, muting and frequency characteristics to match the strength of the FM signal.
- The Best Stations Memory automatically memorizes the six best (strongest) stations in the six preset buttons in the order of their strength.
- Preset scan tuning for sequential recall of preset frequencies.
- Auto reverse function eliminates the need to turn the cassette over and allows uninterrupted playback.
- Choice of either 4-speaker or 2-speaker system is possible. When the 4-speaker system (15 W × 4) is used, volume of front and rear speakers can be adjusted independently, for optimum sound balance. The 2-speaker system (25 W × 2) provides more than enough power for clear, high-fidelity playback.

2. USING THE RADIO

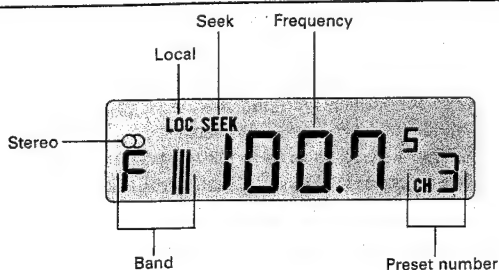
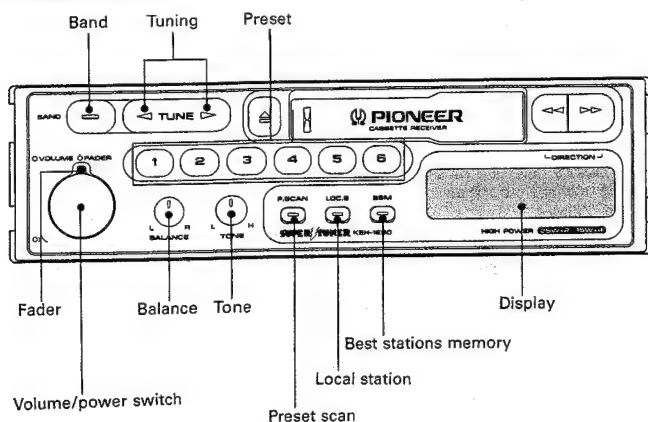
● KEH-3200QR, KEH-2200QR, KEH-3250QR, KEH-2250QR



Volume/balance/loudness/
power switch (KEH-3200QR, KEH-2200QR, KEH-3250QR)
Volume/balance/power switch (KEH-2250QR)



● KEH-1250



● Before attempting operation...

- Set the fader control to the upright position.
- 1. Turning the power switch to the right causes power to switch ON and the current frequency to appear on the display.
- Since the set is designed preferentially for tape play, eject a cassette tape, if mounted, before operating the radio.
- 2. Press the band switch to select the band.
- 3. Press both ends of tuning button and the seek tuning indicator will appear on the display.
- 4. Press either the left or right side of the tuning button to tune in the desired frequency. (Pressing the right side will increase the frequency.)
- 5. Adjust the volume and balance. To adjust the balance, first pull the knob until a click is heard. After setting to the desired level, push the knob in again to its original position.
- 6. Adjust the tone.

● To enter a frequency into the preset memory...

- 7. Hold down one of the preset buttons (1-6) for approximately two seconds. The frequency is stored in memory (assigned to the preset button pressed) once the preset number stops flashing on the display.
- Six FM1 frequencies, six FM2 frequencies, six FM3 frequencies and six AM frequencies can be entered.

● Best Stations Memory Button

Automatically tunes strong frequencies and assigns them to preset buttons 1 through 6 for one-touch automatic tuning. The best stations memory function is activated by pressing this button for approximately 2 seconds. The best stations memory function is indicated by ——— flashing on the display, and this function can be canceled by pressing the band switch. The frequency display returns once the best stations memory function is complete. The frequency displayed at this time is of the strongest station assigned to preset button 1 by the best stations memory function.

- 6 best (strongest) frequencies are memorized in the 6 preset buttons in the order of their strength, the strongest one being assigned to preset button 1.
- The frequencies previously assigned to the preset buttons are retained when 6 frequencies cannot be located.
- The best stations memory is in operation while ——— is flashing on the display.

● Local Station Switch

Pressing this switch increases the seek threshold level so that only relatively strong stations can be tuned in (local indicator will illuminate on the display). Local seek threshold level can be selected among four levels for FM and two levels for AM. Holding this switch down for approximately 2 seconds and then pressing the right side of the tuning button changes the display from L-1, L-2, L-3 to L-4. Pressing the left side of the tuning button changes the display from L-4, L-3, L-2 to L-1 (L-1 and L-2 for AM). The bigger the number, the higher the seek threshold becomes and only relatively strong stations can be tuned in.

● Fader Control

This control is used to adjust the balance between the front and rear speakers when using a 4-speaker system. Turning the control to the right decreases the volume of the rear speakers, while turning it to the left decreases the volume of the front speakers. With 2-speaker systems, set this control to the upright position.

A considerable amount of sound will continue to be produced from speakers of a 4-speaker system which have been cut by setting the fader control either to the front speakers or rear speakers. This is normal and does not indicate malfunction.

Important (KEH-3200QR, KEH-2200QR, KEH-3250QR)

The output of power amp. (sold separately) is not affected by fader control when this unit is linked with the power amp.

● Loudness Switch (KEH-3200QR, KEH-2200QR, KEH-3250QR)

When playing back a tape or listening to the radio at low volume, the low tone is emphasized and more clearly heard by pressing this switch.

● Auto-Loudness (KEH-2250QR, KEH-1250)

When playing back a tape or listening to the radio at low volume, the low tone is automatically emphasized.

● Pop-up button (KEH-3200QR, KEH-2200QR, KEH-3250QR, KEH-2250QR)

When the quickrelease handle is on the bottom, push the button to move it up slightly. Push it when you remove the unit from the dashboard.

The button works only when the handle lock is released.

Before removing this unit from your vehicle, be sure to remove cassette tapes and make sure that radio power is switched OFF.

Seek Tuning

Press both ends of tuning button and tuning to the next higher or lower broadcast on the band can be accomplished automatically by simply pressing either the right or left side of the tuning button. FM frequencies change in 0.2 MHz steps while those in the AM band change in 10 kHz steps. (KEH-3200QR, KEH-2200QR)

FM frequencies change in 50 kHz steps while those in the AM band change in 9 kHz steps. (KEH-3250QR, KEH-2250QR, KEH-1250)

- AM frequencies are tuned in 10 kHz steps after the tuning steps are changed.

Preset Scan Tuning

Pressing the preset scan button (CH indicator flashes) causes previously stored frequencies to be tuned in sequentially for eight seconds each. Press again when the desired frequency is tuned in to cancel preset scan tuning.

Preset Tuning

Pressing the preset button instantly tunes in the frequency programmed in the memory for that button.

Manual Tuning

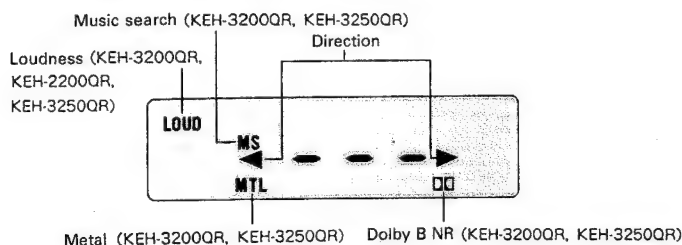
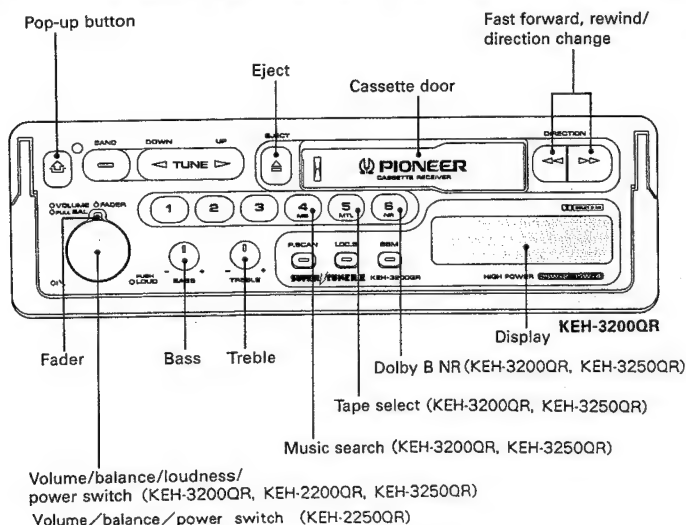
When manual tuning is employed, FM frequencies change in 0.2 MHz steps while AM frequencies change in 10 kHz steps. (KEH-3200QR, KEH-2200QR)

When manual tuning is employed, FM frequencies change in 50 kHz steps while AM frequencies change in 9 kHz steps. (KEH-3250QR, KEH-2250QR, KEH-1250)

- AM frequencies are tuned in 10 kHz steps after the tuning steps are changed.
1. Press both ends of tuning button and the seek tuning indicator will disappear from the display.
 2. Change the frequency by pressing either the left or right side of the tuning button. Pressing the button once will change the frequency one step (see above). Continuously depressing either side of the button will successively change the frequency at the prescribed step.

3. USING THE TAPE DECK

● KEH-3200QR, KEH-2200QR, KEH-3250QR, KEH-2250QR



● Before attempting operation...

- Set the fader control to the upright position.
- 1. Turning the power switch to the right causes power to switch ON.
- 2. Loading a cassette tape into the load slot causes playback to begin automatically.
- 3. Adjust the volume and balance. To adjust the balance, first pull the knob until a click is heard. After setting to the desired level, push the knob in again to its original position.
- 4. Adjust the tone.
- 5. When tape playback reaches the end of the tape, playback will automatically switch from the side being played to the opposite side (ie. Side A to Side B or vice versa) (Auto-reverse). To eject the tape during playback, press the eject button.
- A loose or warped label on a cassette tape may interfere with the eject mechanism of the unit or cause the cassette to become jammed in the unit. Avoid using such tapes or remove such labels from the cassette before attempting use.
- Do not try to eject the cassette immediately after insertion, as it will cause malfunction. Wait a few seconds.
- Loose tapes should be rewound with the aid of a pencil and unevenly wound tapes rewound with the use of the fast forward function.
- Be sure to eject the tape when the vehicle's ignition is turned OFF. Leaving the tape in the unit can deform the pinch roller causing wow and flutter during tape playback.

● Fast Forward/Rewind

Since the transport can be in either direction, both the left and right high-speed tape transport buttons can be regarded as fast forward/rewind buttons.

For fast forward, press the high-speed tape transport button that corresponds to the direction that is shown by the direction indicator. When the end of the tape is reached, playback will automatically begin from the opposite side of the tape (Auto-reverse).

For rewind, press the button that is opposite that of the direction shown by the direction indicator. When the end of the tape is reached, playback will automatically begin from the beginning of the same side of the tape (Auto-replay).

Fast forward and rewind can be terminated by pressing the respective opposite high-speed tape transport button.

● Direction Change

Push the fast forward and rewind buttons together to switch from one side of the tape to the other (from Side A to Side B or vice versa).

● Dolby B NR Switch (KEH-3200QR, KEH-3250QR)

Press when playing a tape recorded with Dolby NR.

● Tape Select Switch (KEH-3200QR, KEH-3250QR)

This switch is used to switch to the proper mode for the tape being used and should be depressed when using chrome or metal tapes.

Music Search (KEH-3200QR, KEH-3250QR)

● Returning to the beginning of selection A

Press the music search button and then the high-speed tape transport button for the direction opposite that is shown by the direction indicator. Playback will automatically start from the beginning of selection A.

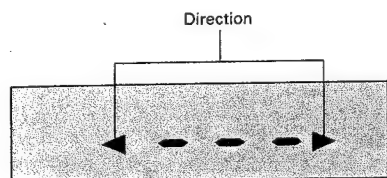
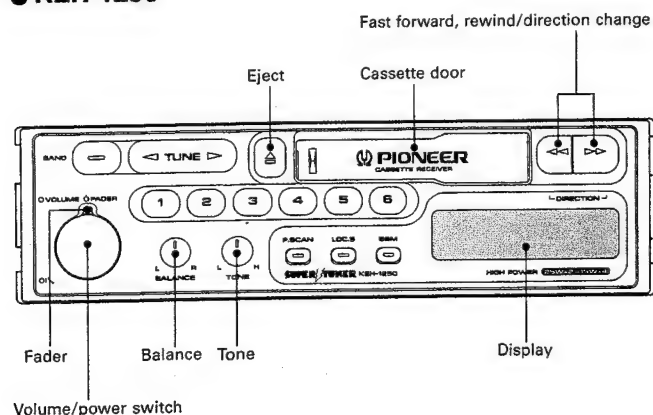
● Moving from selection A to selection B

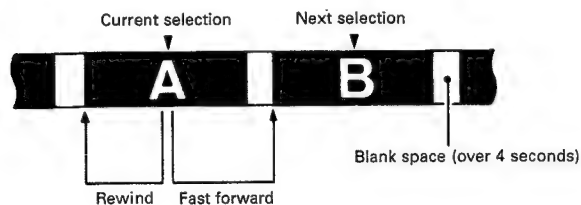
Press the music search button and then the high-speed tape transport button that corresponds to the direction shown by the direction indicator. Playback will automatically start from the beginning of selection B.

To enable regular fast forward/rewind operations, press the music search button again to turn the function OFF. The following errors will cause the music search function to operate improperly, even though the unit is not malfunctioning.

- Unrecorded "blank" portions between selections less than 4 seconds → the blank portion cannot be detected by the unit.
- Pauses in recorded conversations longer than 4 seconds → the unit reads these as blanks between selections.
- Portions recorded at very low volume for more than 4 seconds → the unit reads these as blanks between selections.

● KEH-1250





4. CONNECTIONS

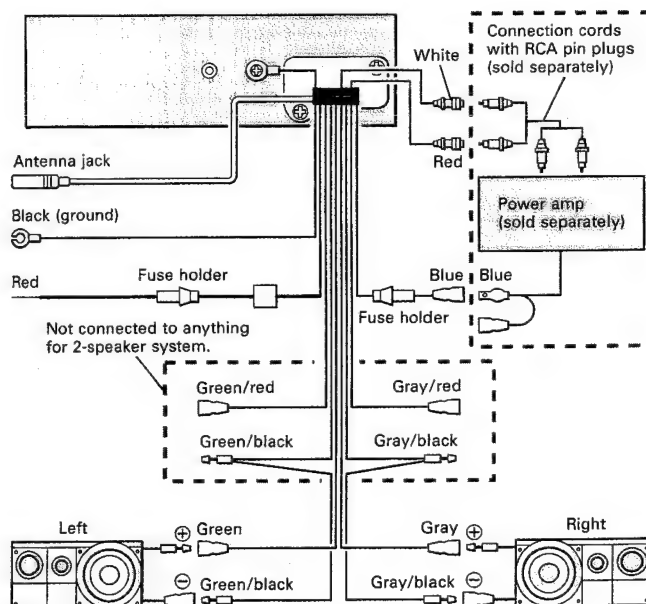
Note:

- To avoid shorts in the electrical system, be sure to disconnect the battery \ominus cable before beginning installation.
- Replace fuses only with the types stipulated on the fuse holder.
- Be sure to properly connect the color coded leads. Failure to do so can cause malfunctions.
- Cover unused terminals with tape to prevent electrical shorts.
- Since a unique BPTL circuit is employed, never wire so the speaker leads are directly grounded or the left and right speaker \ominus leads are common.
- Speakers connected to this unit must be a high-power type possessing maximum input of at least 25 W and impedance of 4 to 8 ohms. Connecting speakers with output and/or impedance values other than those noted here can damage the speakers.
- Refer to the power amp owner's manual when connecting a power amp (sold separately) to the RCA pin jack. (KEH-3200QR, KEH-2200QR, KEH-3250QR)
- When the power amp is being linked with this system, be sure not to connect the blue lead to the amp's power terminal. Likewise, when linking this system with the auto-antenna, do not connect to power terminal for the antenna. Such connection can make overcurrent cause malfunctions.

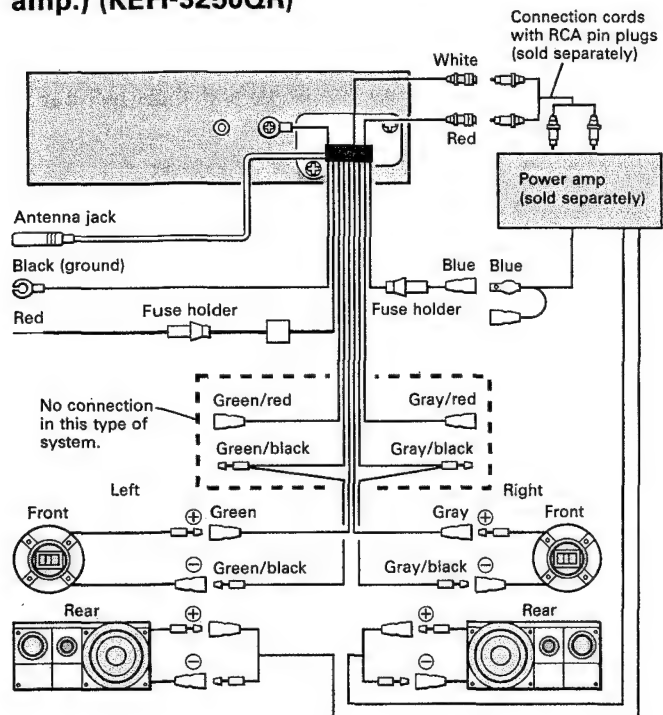
Black (ground)	To vehicle (metal) body.
Blue	If this unit is combined with a power amp, connect its blue lead to the blue lead (system control terminal) of the power amp. If combined with an auto-antenna, connect its blue lead to the relay control terminal of the auto-antenna. (MAX. 300 mA, 12 V DC)
Orange (KEH-1250)	To terminal always supplied with power regardless of ignition switch position.
Red	To electric terminal controlled by ignition switch (12 V DC) ON/OFF.

● KEH-3200QR, KEH-2200QR

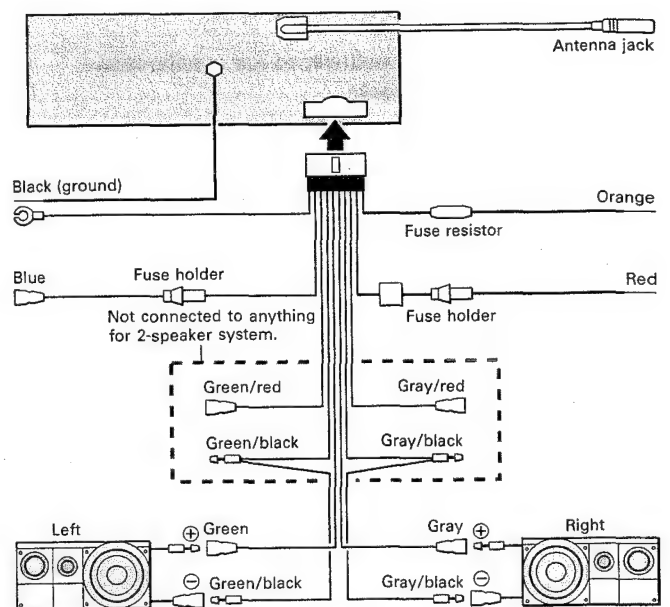
2-speaker system



4-speaker system 2 (Using separately available amp.) (KEH-3250QR)

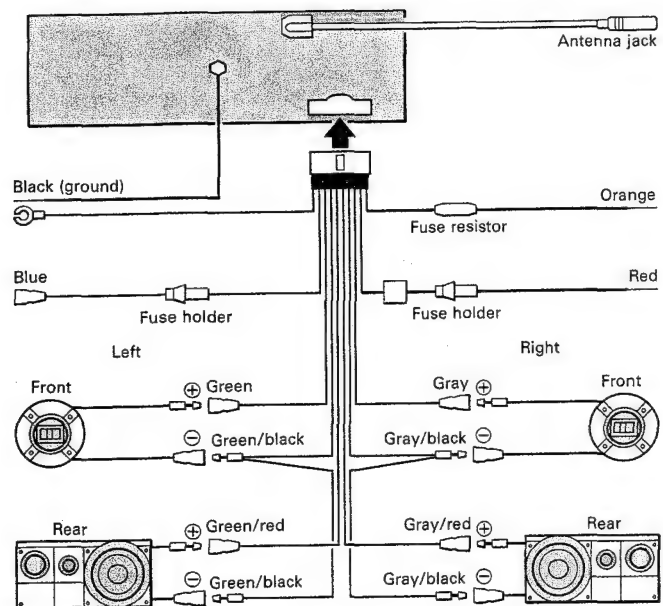


2-speaker system



● KEH-1250

4-speaker system



5. DISASSEMBLY

● Removing the Case

1. Insert and turn a screwdriver to remove the case.
2. Raise the case to remove.

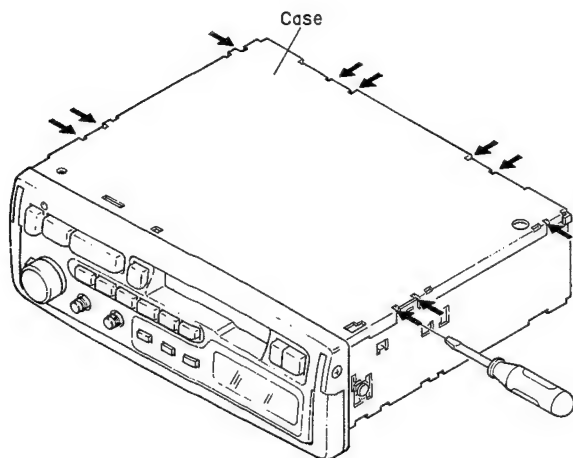


Fig. 1

● Removing the Handle

1. Remove the two screws, and then remove the handle.

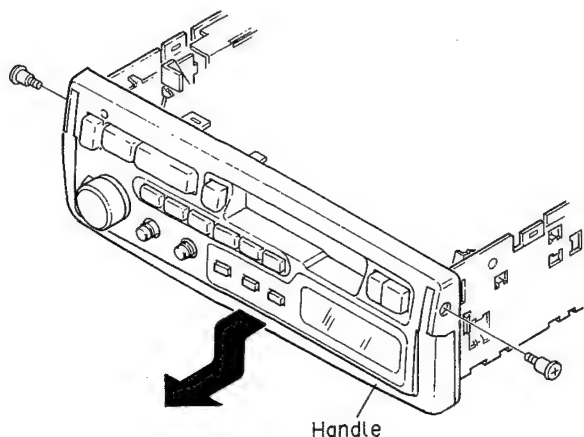


Fig. 2

● Removing the Grille Assy

1. Remove the two knobs.
2. Press the tabs at four locations, and then pull out the grille assy.

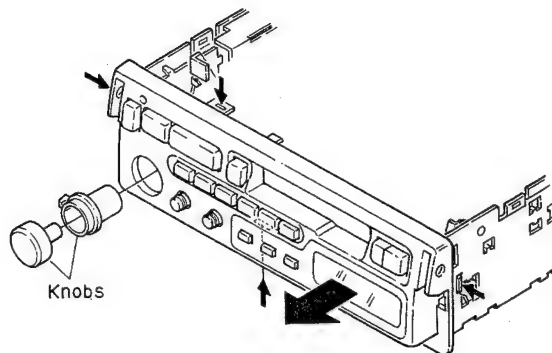


Fig. 3

● Removing the Cassette Mechanism Assy

1. Remove the insulator
2. Disconnect the connector.
3. Remove the six screws A and two screws B.
4. Remove the cassette mechanism assy.

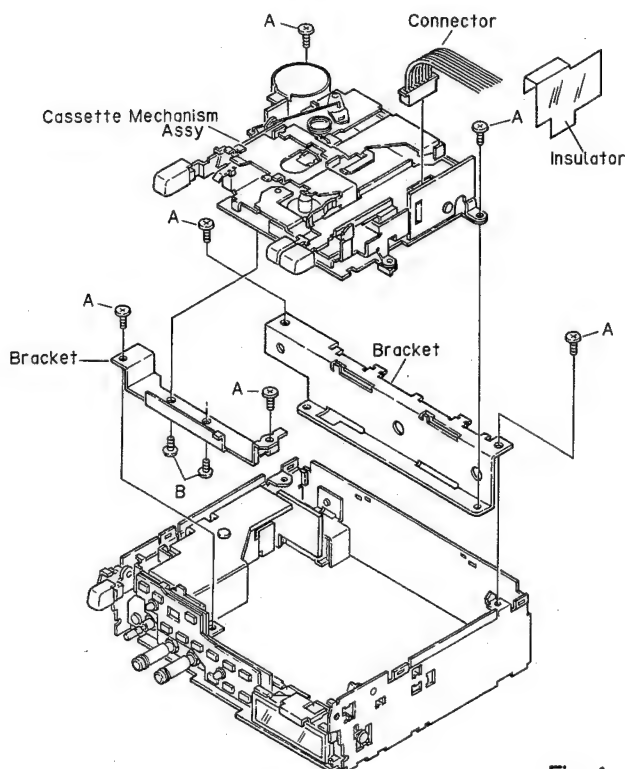


Fig. 4

● **Removing the Dolby NR P. C. Board
(KEH-3200QR, KEH-3250QR)**

1. Pull out the Dolby NR P. C. Board.

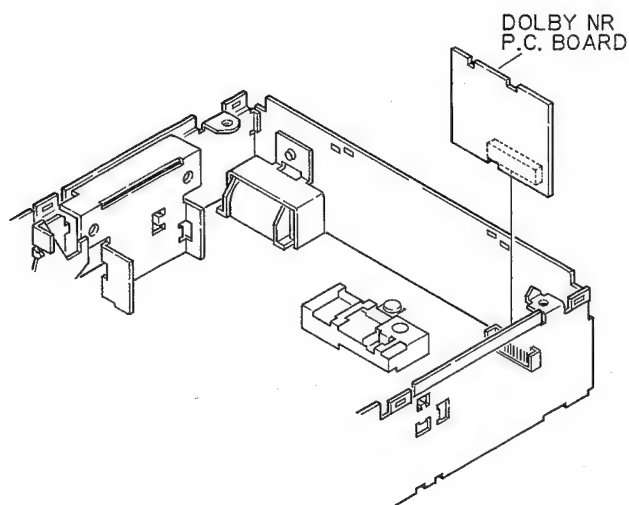


Fig. 5

● **Removing the Tuner Amp Unit (KEH-1250/ES)**

1. Remove the screw C and for screws D.
2. Raise up on tuner amp unit to remove it from the chassis unit.

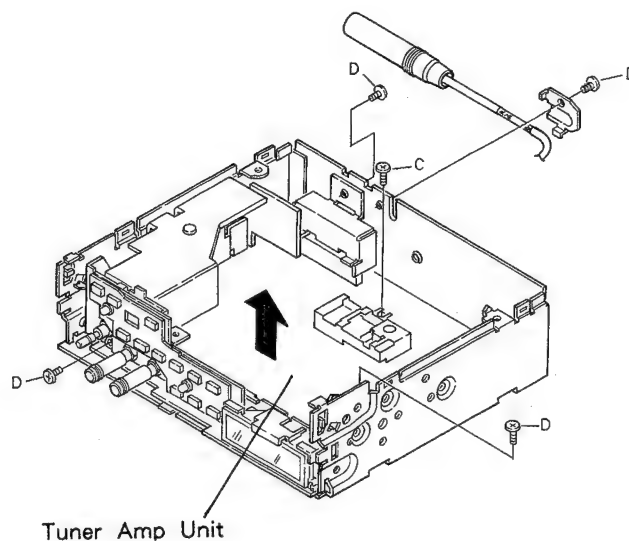


Fig. 7

● **Removing the Tuner Amp Unit
(KEH-3200QR, KEH-3250QR, KEH-2200QR, KEH-2250QR)**

1. Remove the four screws C.
2. Raise up on tuner amp unit to remove it from the chassis unit.

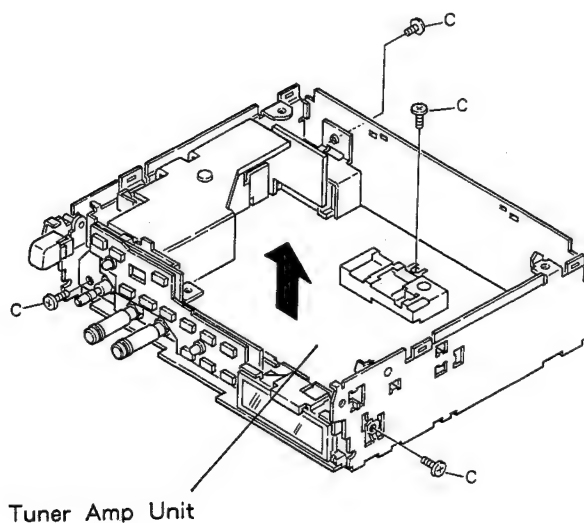


Fig. 6

6. ADJUSTMENT

● Connection Diagram

NOTICE:

Select C1 so that total capacity of 80pF is attained from the direction of the receiver jack.

Z: Output impedance of SSG.

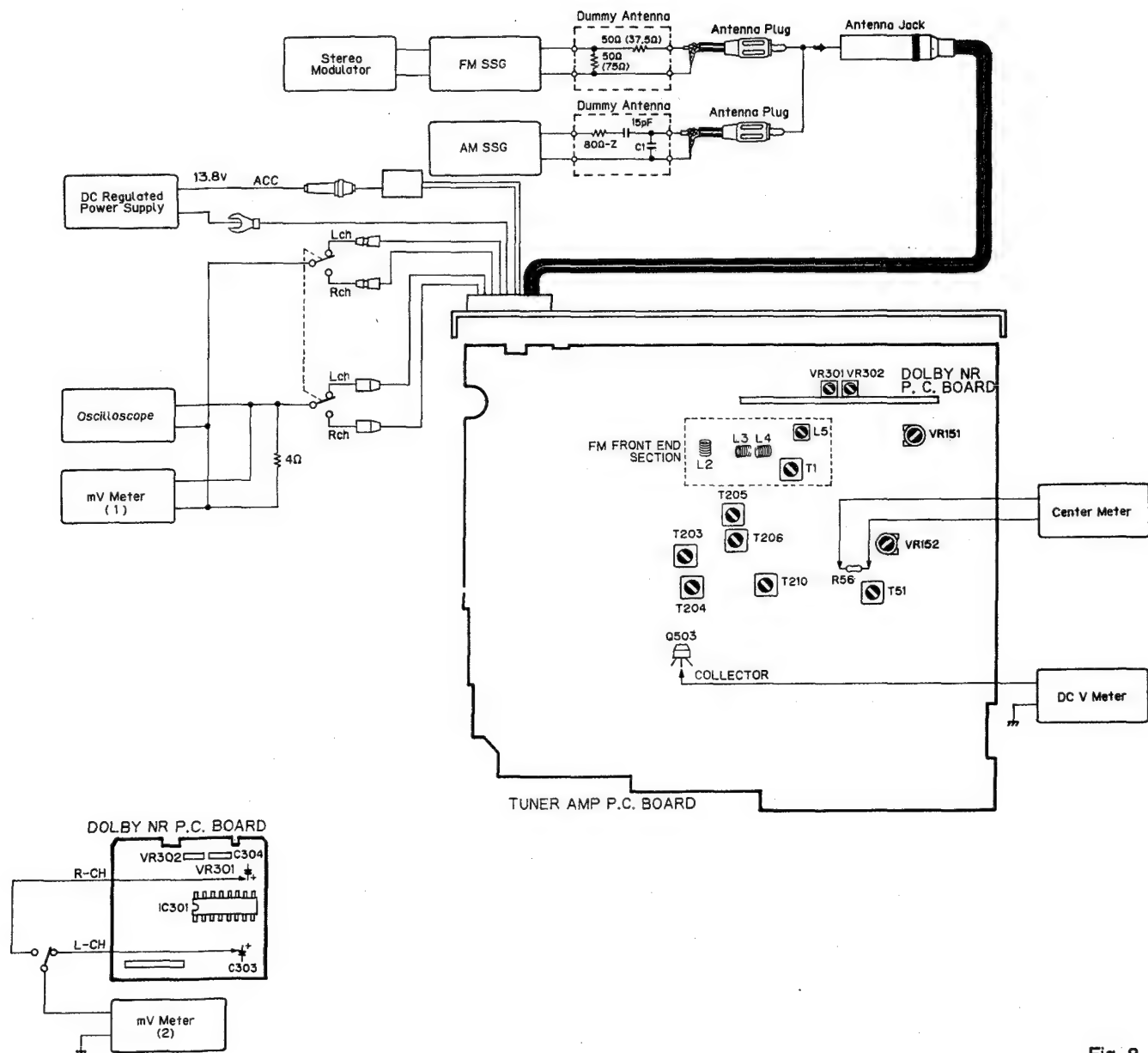


Fig. 8

DOLBY NR ADJUSTMENT
(KEH-3200QR/UC, KEH-3250QR/ES)

No.	Cassette Tape	Adjusting Point	Adjustment Method (Switch Position)
1	NCT-150 (400Hz, 200nwb/m)	VR301 (Lch) VR302 (Rch)	mV Meter (2) : -6dBs±1dB (DOLBY NR Switch:OFF)

FM ADJUSTMENT ※1Stereo MOD. : Pilot=10%
 ※2Stereo MOD. : 1kHz, L+R=90% , Pilot=10%

	No.	FM SSG (400Hz, 100%)		Displayed Frequency (MHz)	Adjusting Point	Adjustment Method (Switch Position)
		Frequency (MHz)	Level (dBf)			
Tuning Volt	1	—	—	108.0	L5	DC V Meter : 7.0V
Tra- cki- ng	1	98.1	15	98.1	L2, L4	mV Meter (1) : Maximum
	2	98.1	15	98.1	T1	mV Meter (1) : Maximum
IF	1	98.1 Unmodulated	65	98.1	T51	Center Meter : 0
Pil- ot Can- cel	1	98.1※1	65	98.1	VR151	mV Meter (1) : Minimum (MPX Filter:OFF)
ARC	1	98.1※2	40	98.1	VR152	mV Meter (1) : Separation 5dB

AM ADJUSTMENT

	No.	AM SSG (400Hz, 30%)		Displayed Frequency (kHz)	Adjusting Point	Adjustment Method (Switch Position)
		Frequency (kHz)	Level (dBμV)			
Tun- ing Volt	1	—	—	530	T210	DC V Meter : 1.0V
Tra- cki- ng	1	1,000	20	1,000	T203, 204, 205, 206	mV Meter (1) : Maximum

AM ADJUSTMENT ES model when tuning step at 9kHz.
(KEH-3250QR/ES, KEH-2250QR/ES, KEH-1250/ES)

	No.	AM SSG (400Hz, 30%)		Displayed Frequency (kHz)	Adjusting Point	Adjustment Method (Switch Position)
		Frequency (kHz)	Level (dBμV)			
Tun- ing Volt	1	—	—	531	T210	DC V Meter : 1.0V
Tra- cki- ng	1	603	20	603	T203, 204, 205, 206	mV Meter (1) : Maximum

7. BLOCK DIAGRAM

● KEH-3200QR/UC

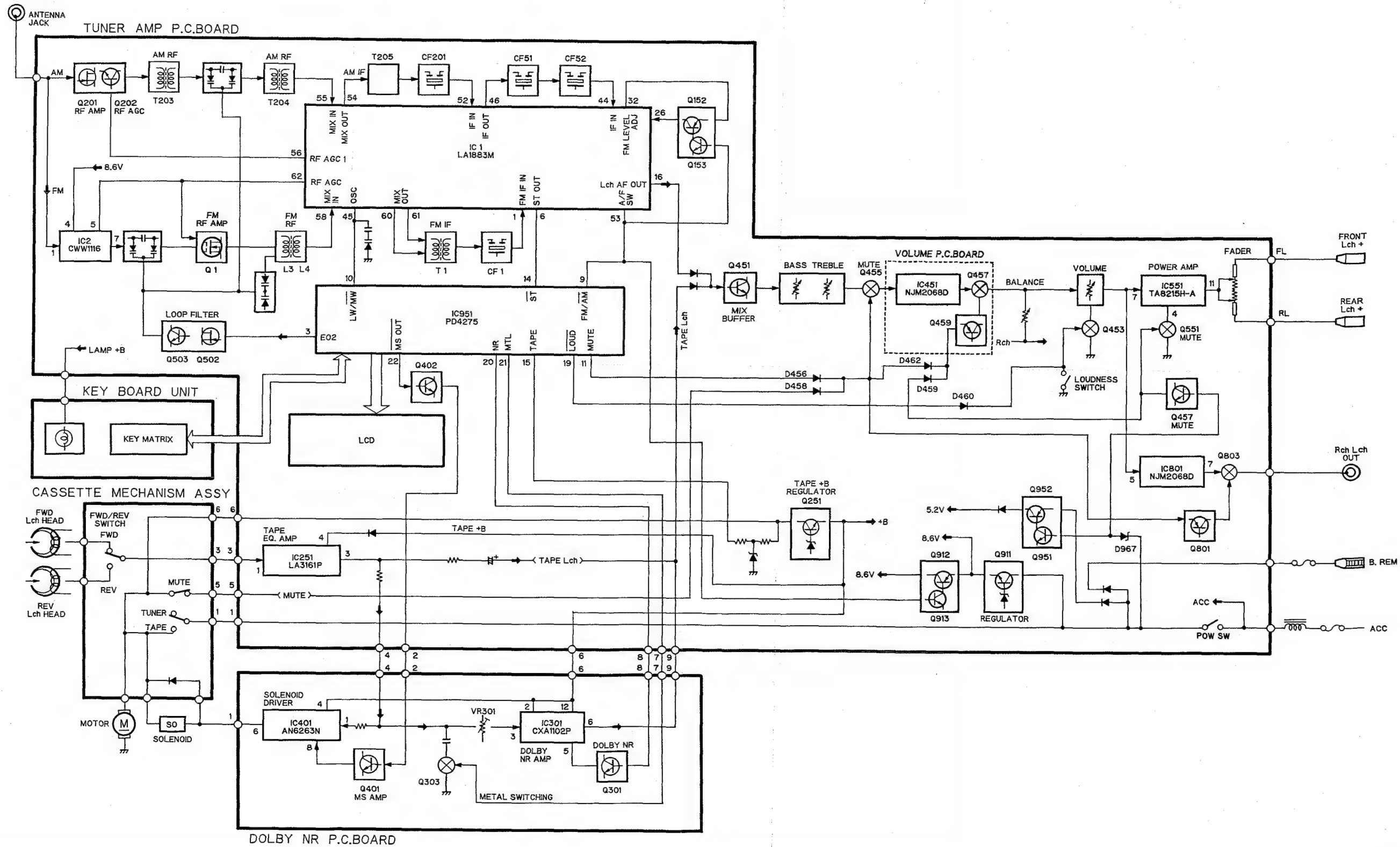
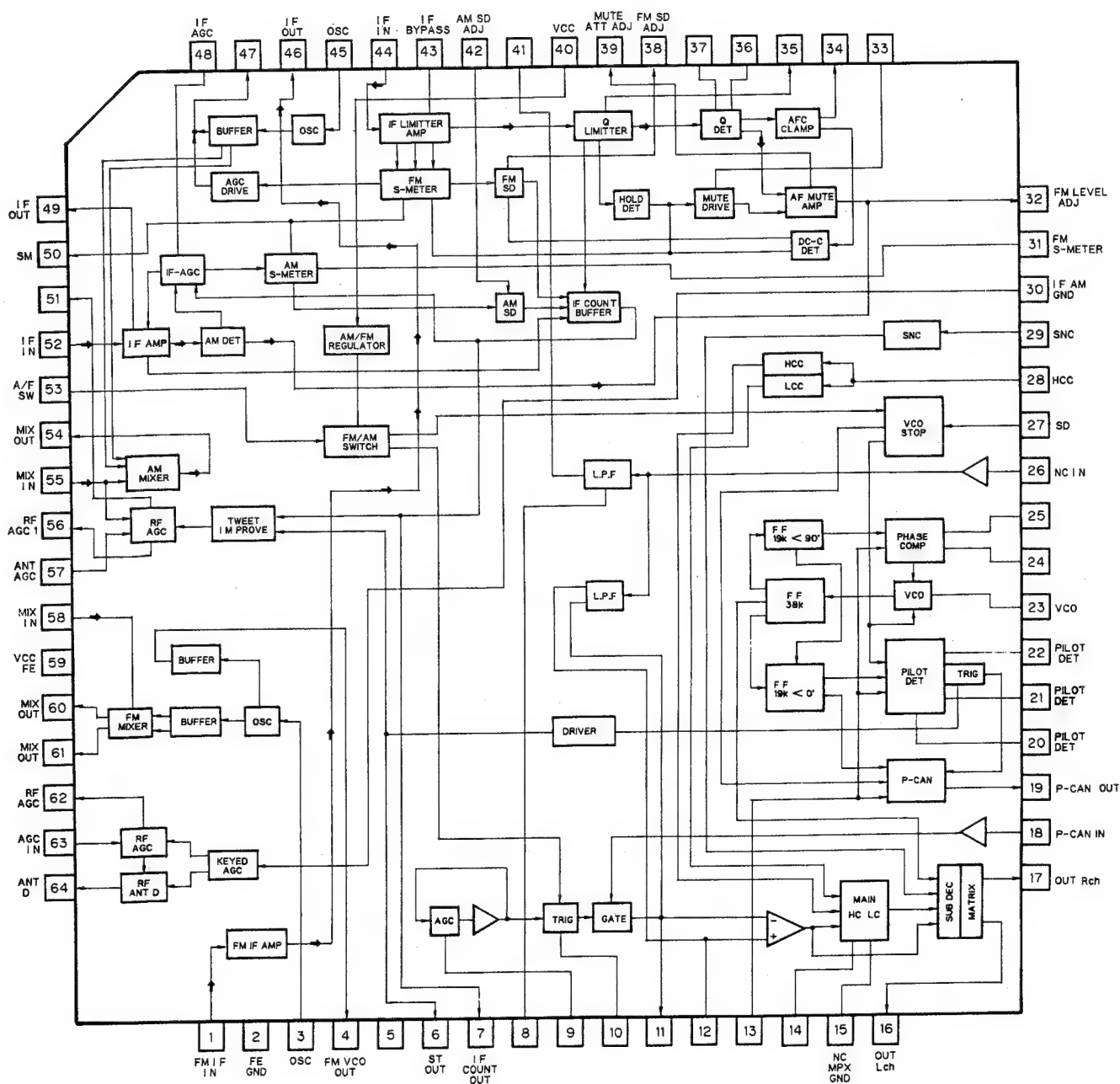


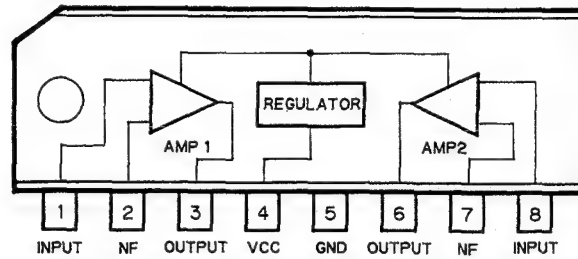
Fig. 9

● ICs

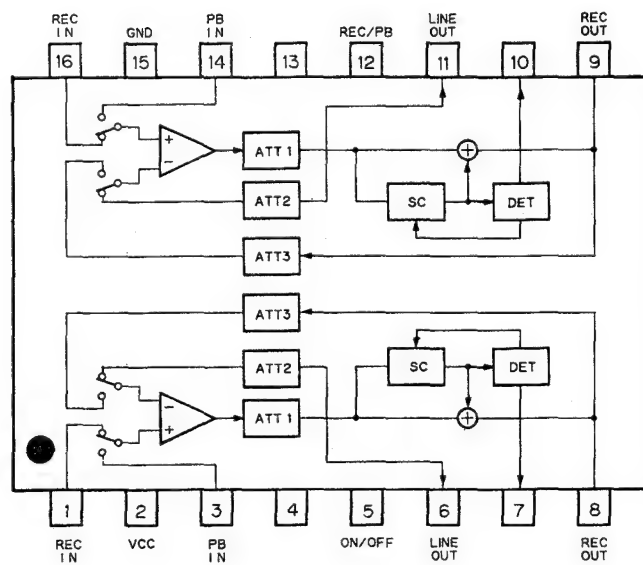
LA1883M



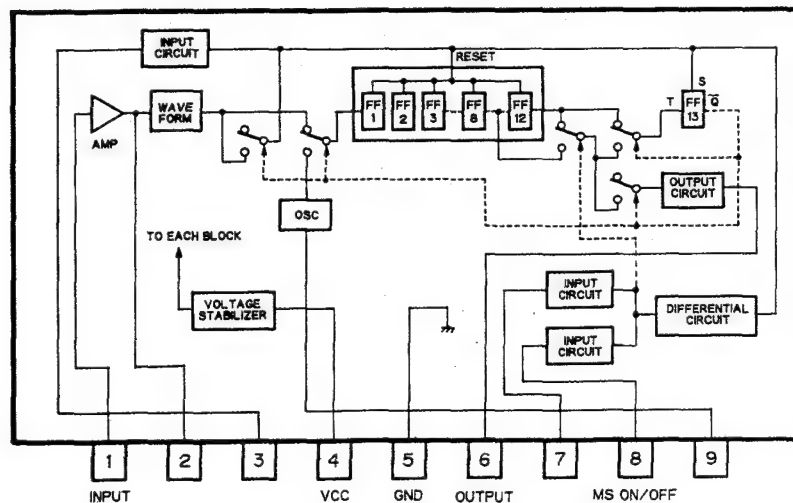
LA3161P

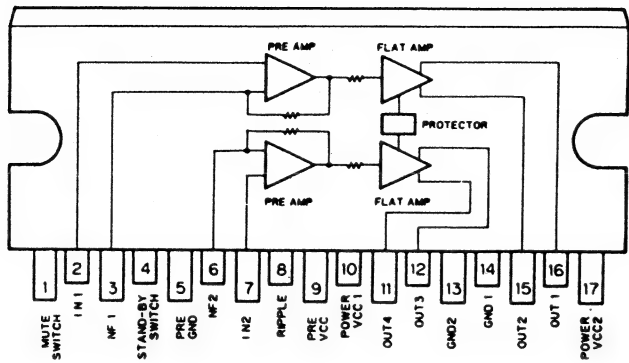
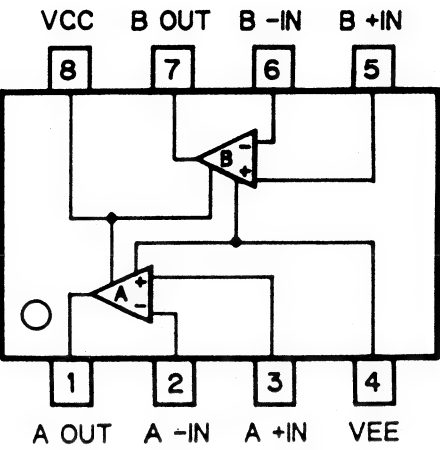


CXA1102P



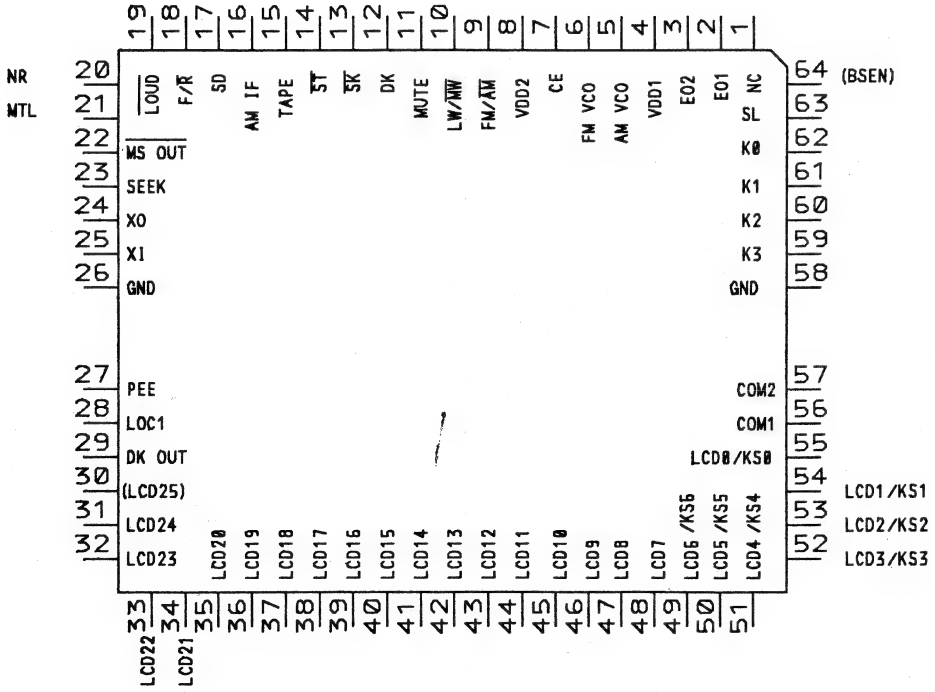
AN6263N





*PD4275

IC's marked by * are MOS type.
Be careful in handling them because they are very
liable to be damaged by electrostatic induction.



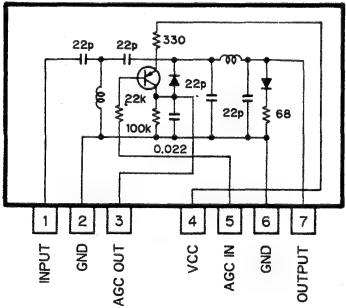
● Pin Function (PD4275)

Pin No.	Pin Name	I/O	Output Format	Function and Operation
1	NC		C	Not used
2	EO1	Output	C(3)	PLL error output pins
3	EO2			
4	VDD1			Device power supply pin
8	VDD2			
5	VCOL	Input		AM local oscillator signal input pin
6	VCOH	Input		FM local oscillator signal input pin
7	CE	Input		Chip enable input pin
9	FM/AM	Output	C	FM/AM band select pin "H":FM "L":AM
10	LW	Output	C	Loop filter switching output pin "H":LW
11	MUTE	Output	C	Mute output pin "H":ON
12	DK	INPUT		SK signal input pin
13	SK	INPUT		DK signal input pin
14	ST	Input		Stereo broadcast detection signal input pin "L":Stereo indicator is displayed
15	TAPE	INPUT		Tape power ON/OFF input pin "H":ON
16	AMIF	Input		AM IF signal input pin
17	SD	Input		FM SD input "H":During broadcast reception
18	F/REV	Input		Tape motion signal input pin "H":Forward
19	LOUD	Input		Loudness ON/OFF signal input pin "L":ON
20	NR	Output	C	Dolby NR ON/OFF output pin "H":ON
21	METAL	Output	C	Tape METAL ON/OFF output pin "L":ON
22	MSOUT	Output	C	Tape MS ON/OFF output pin "L":ON
23	SEEK	Output	C	"H" level:SEEK, BSM, BSA and PSCAN
24	XO	Output	C	Quartz oscillator terminal
25	XI	Input		
26	GND			GND terminal
27	PEE	Output	C	Alarm output pin
28	LOC1	Output	C	Halt sensitivity switching pin "L":DX SEEK(P.SCAN) "H":LOC SEEK
29	DKOUT	Output	C	Control by DK (terminal #12) input signal "H":DK input signal is detected as 125Hz
30	NC			Not used

Pin No.	Pin Name	I/O	Output Format	Function and Operation
31 | 55	LCD24 | LCD0	Output	C	Segment signal output pins to LCD
48 | 55	KS7 | KS0	Output	C	Key matrix strobe output pins
56 57	COM1 COM2	Output	C	Common signal output pins to LCD
59 | 62	K3 | K0	Input		Key matrix return input pins
63	SL	Input		AM station level analog input pin
64	NC		C	Not used

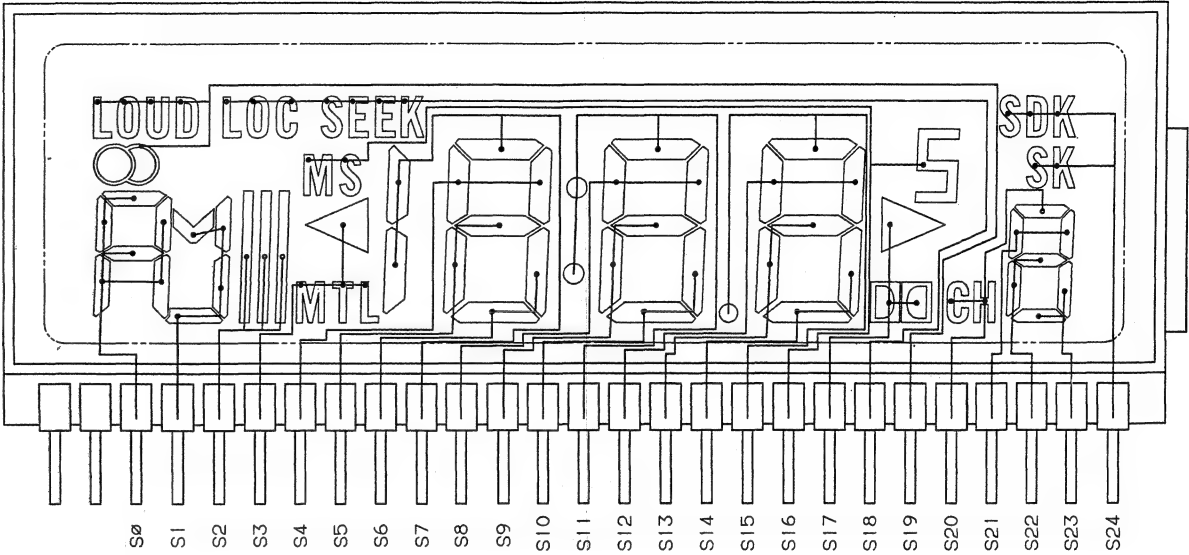
Output format	Meaning
C	C-MOS
C(3)	C-MOS(3 State)

CWW1116

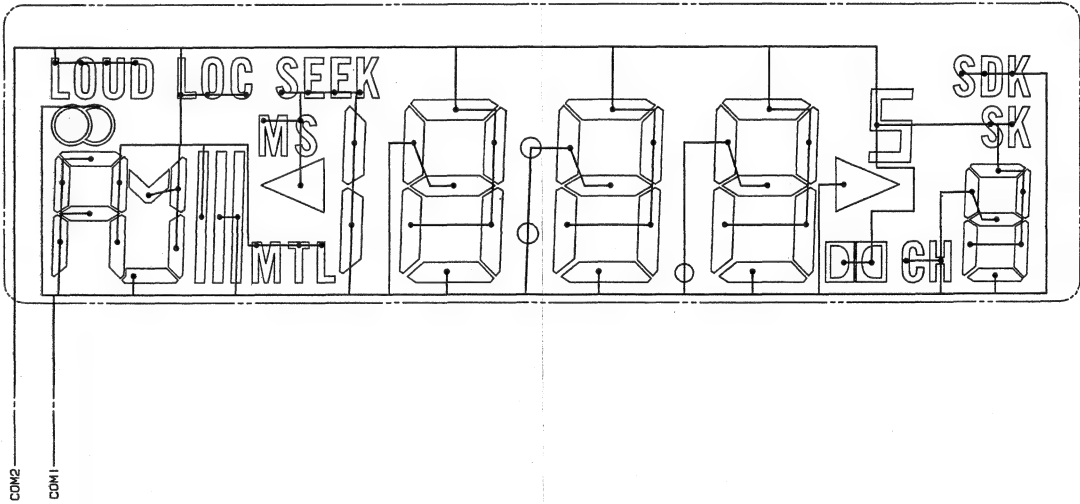


● LCD(CAW1162)

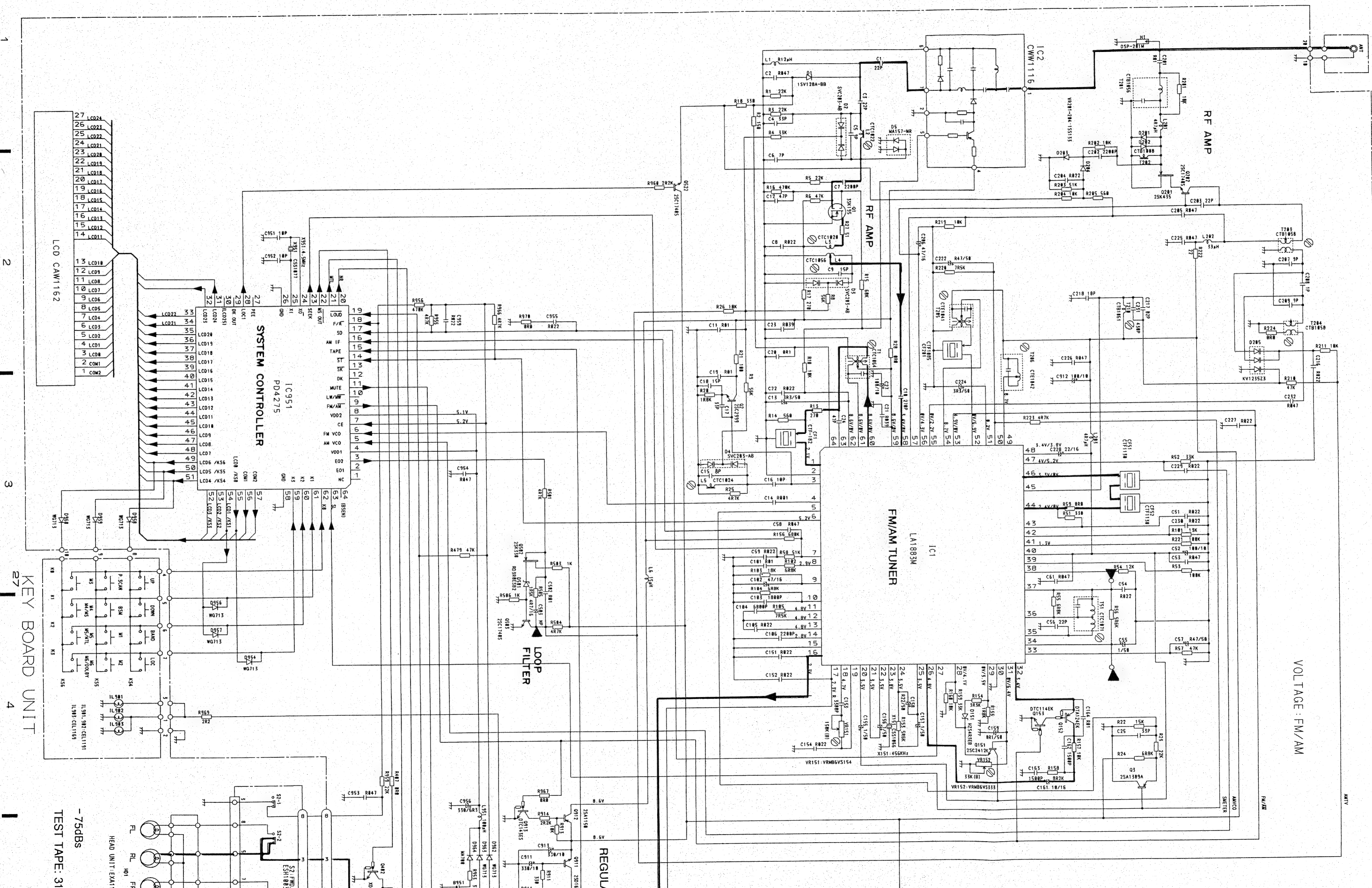
SEGMENT



COMMON



9. SCHEMATIC CIRCUIT DIAGRAM (KEH-3200QR)



VOLTAGE : FM/AM

NOTE:
□ Symbol indicates a resistor.
No differentiation is made between chip resistors and discrete resistors.
— Symbol indicates a capacitor.
No differentiation is made between chip capacitors and discrete capacitors.

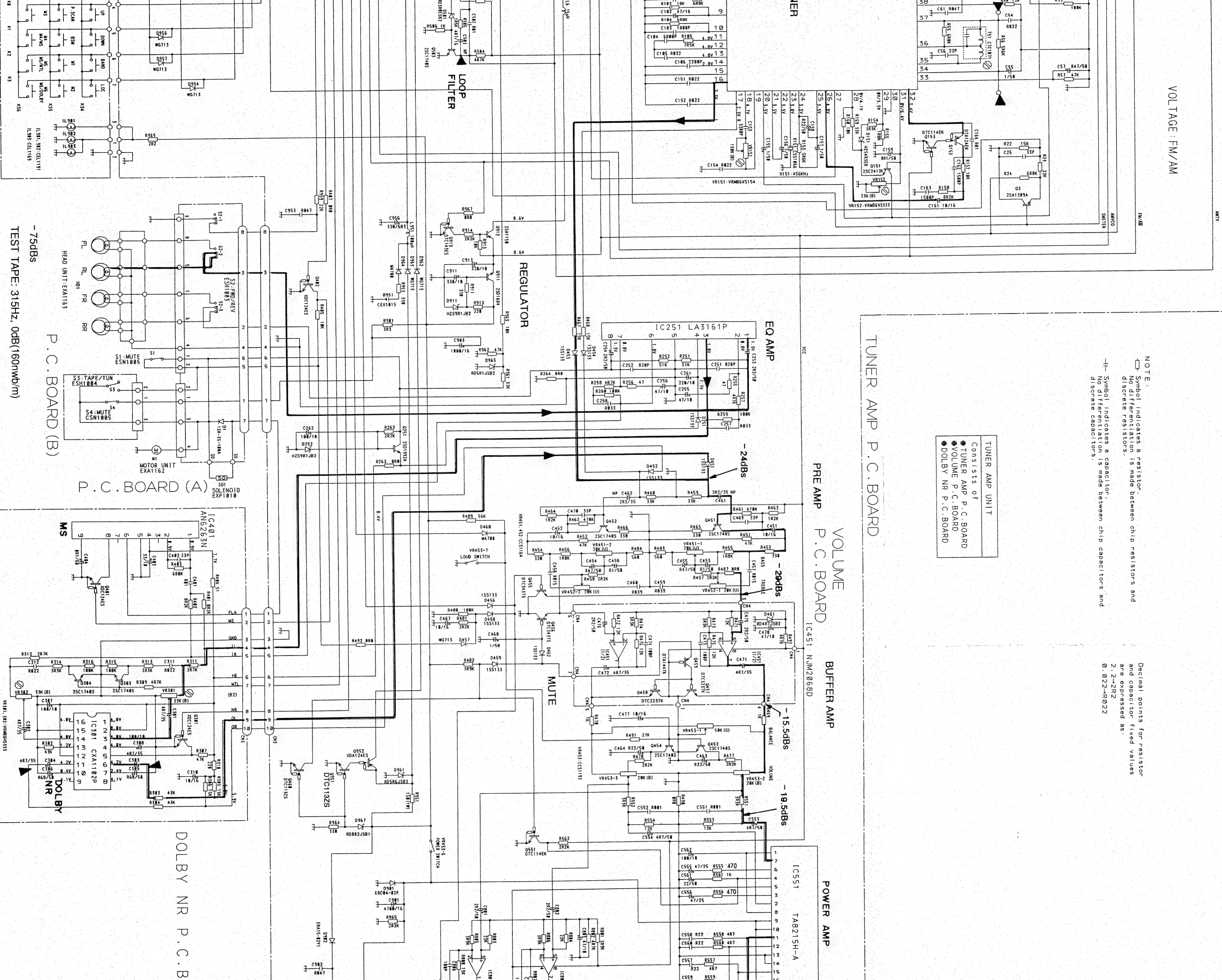
Decimal points for resistor and capacitor fixed values are expressed as:
2.2-2R2
0.022-R022

TUNER AMP UNIT
Consists of
● TUNER AMP P.C. BOARD
● VOLUME P.C. BOARD
● DOLBY NR P.C. BOARD

TUNER AMP P.C. BOARD

VOLUME
PRE AMP P.C. BOARD
BUFFER AMP

POWER AMP



KEY BOARD UNIT

4

5

6

28

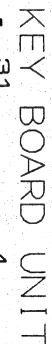
7

8

Decimal points for resistor and capacitor fixed values are expressed as:
2.2→2R2
0.022→R022

TUNER AMP P.C.C. BOARD





HEAD UNIT: EXA116:

...

VOLTAGE : FM/AM

NOTE :
□ Symbol indicates a resistor
□ Symbol indicates a capacitor
No differentiation is made between chip resistors and discrete resistors.
— Symbol indicates a capacitor.
No differentiation is made between chip capacitors and discrete capacitors.

Decimal points for resistor and capacitor fixed values are expressed as:
2.2-22P
0.022-R022

TUNER AMP UNIT
Consists of
● TUNER AMP P.C. BOARD
● VOLUME P.C. BOARD
● DOLBY NR P.C. BOARD

TUNER AMP P.C. BOARD

PRE AMP P.C. BOARD

IC451 : NJM2068D

POWER AMP

IC551 : TA8215H-A

EQ AMP

-24dBs

-29dBs

-15.5dBs

-19.5dBs

REGULATOR

LOOP FILTER

DOLBY NR

DOLBY NR P.C. BOARD

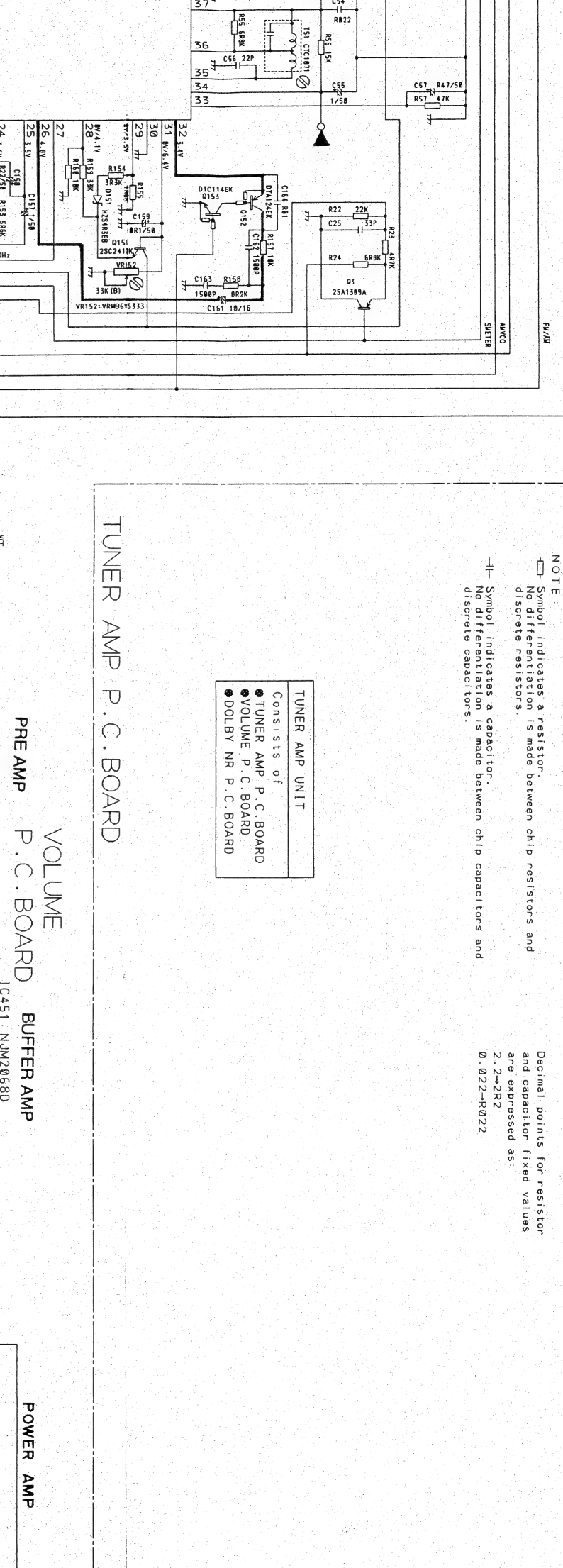
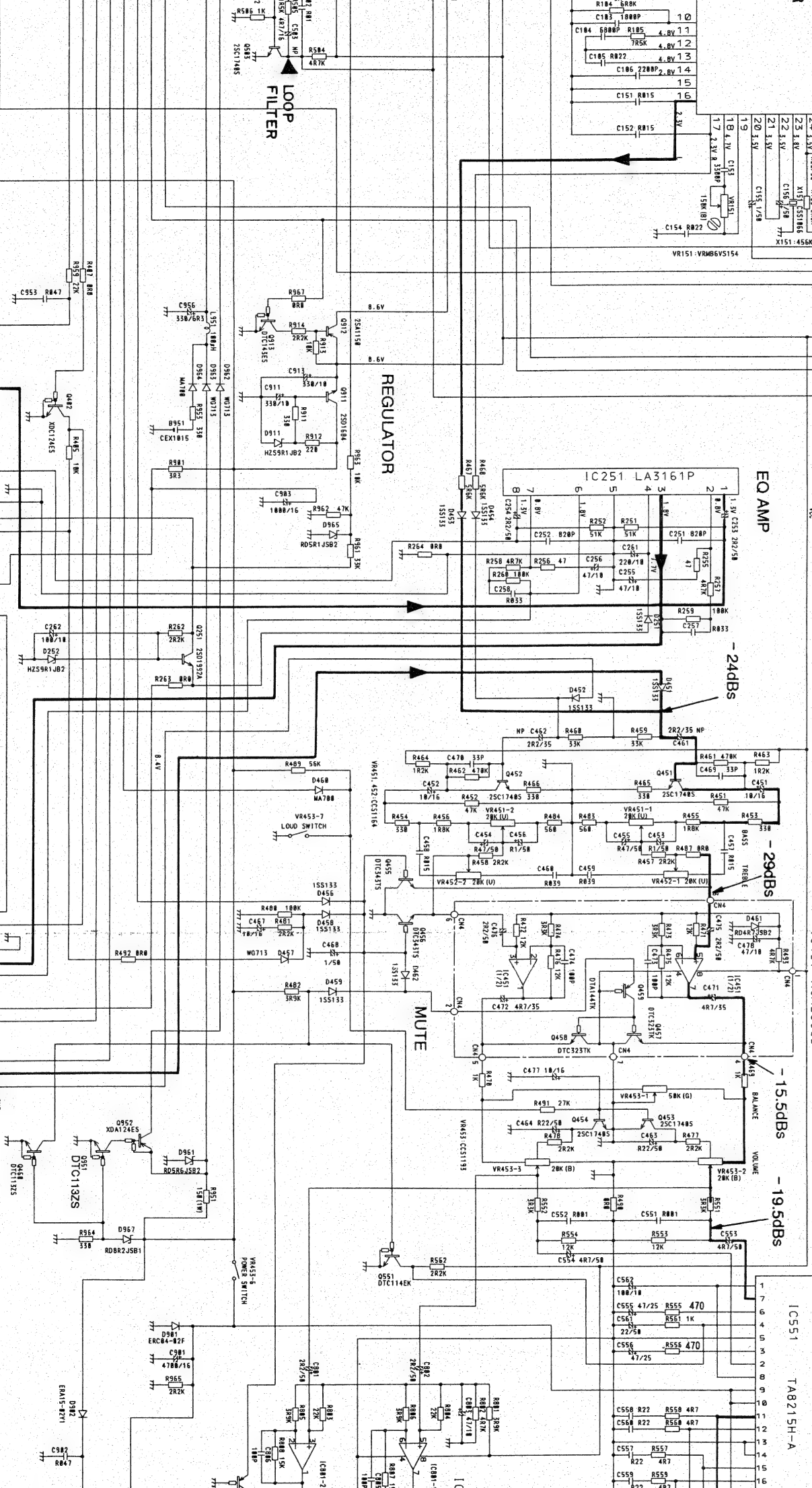
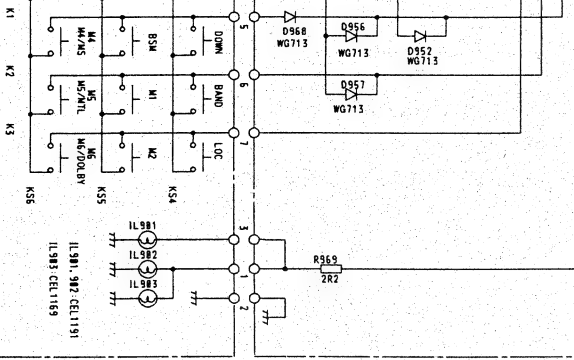
HEAD UNIT EXA1163

MOTOR UNIT EXA1162

P.C. BOARD (A)

P.C. BOARD (B)

-75dBs
TEST TAPE : 315Hz,0dB(160nWb/m)



NOTE:
 □ Symbol indicates a resistor.
 No differentiation is made between chip resistors and discrete resistors.
 —□— Symbol indicates a capacitor.
 No differentiation is made between chip capacitors and discrete capacitors.

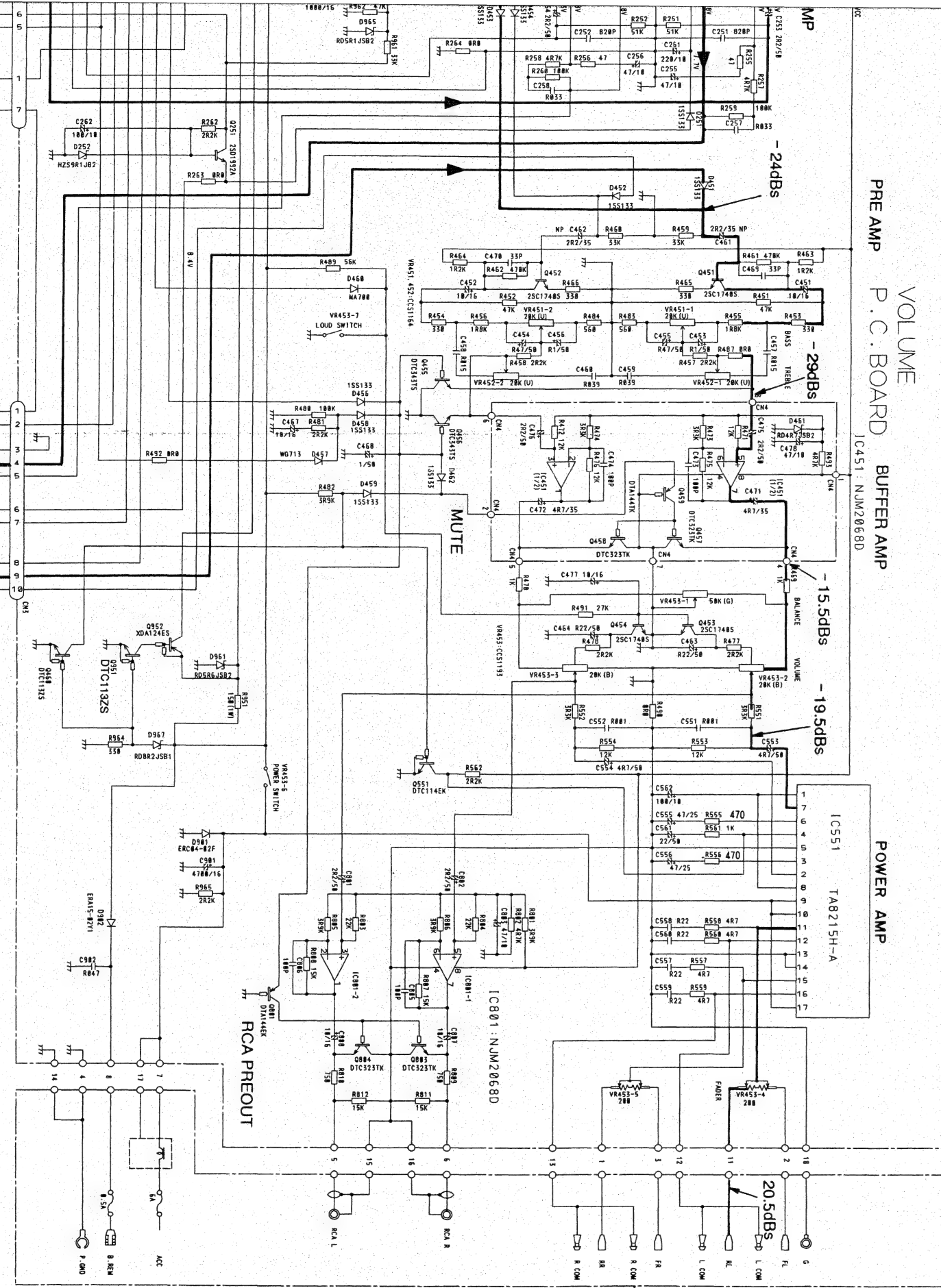
Decimal points for resistor and capacitor fixed values are expressed as:
 2.2-2R2
 0.022-R022

TUNER AMP UNIT
Consists of
● TUNER AMP P.C. BOARD
● VOLUME P.C. BOARD
● DOLBY NR P.C. BOARD

JNER AMP P.C. BOARD

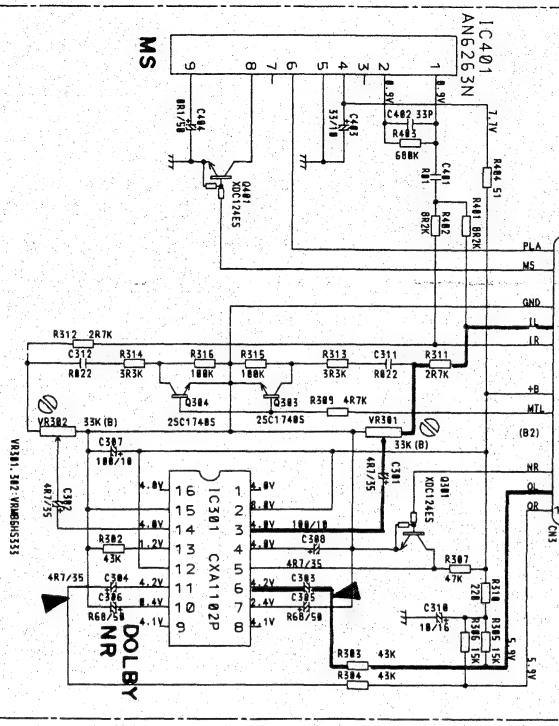
PRE AMP P.C. BOARD BUFFER AMP

POWER AMP



P.C. BOARD (A)

C. BOARD (B)



DOLBY NR P.C. BOARD

Fig. 12

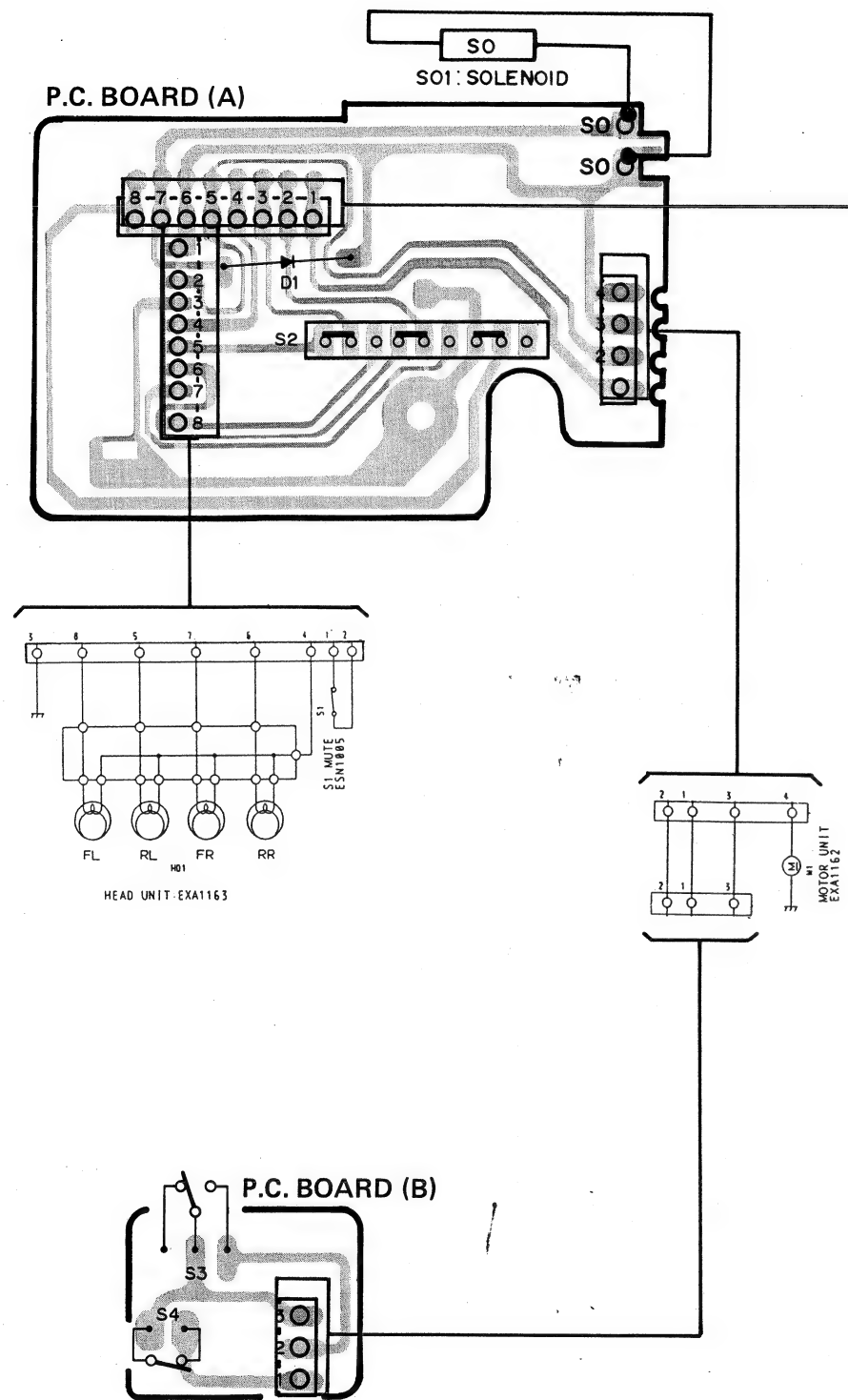
11. CONNECTION DIAGRAM (KEH-3250QR)

A

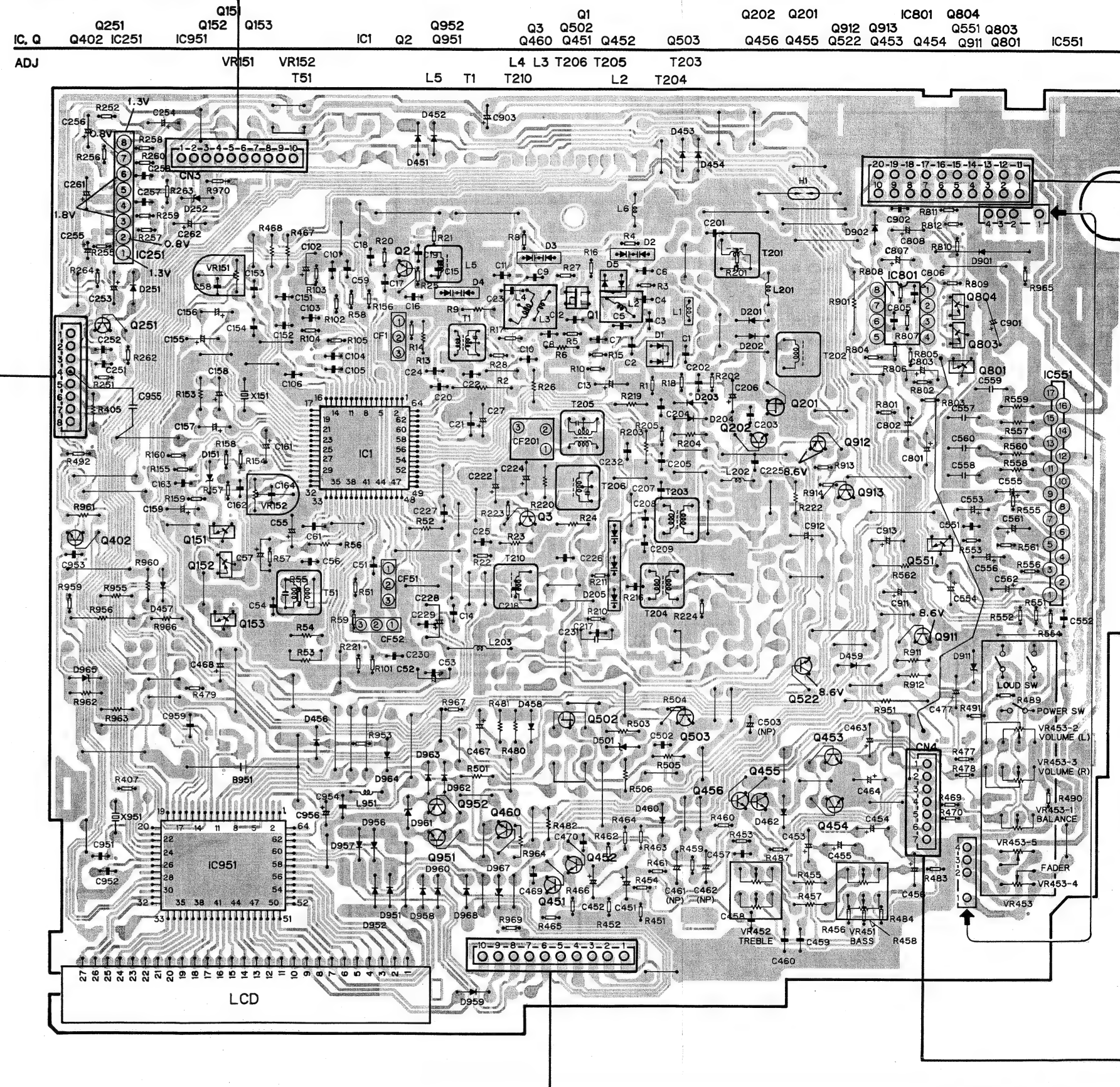
B

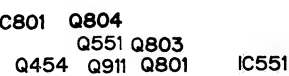
C

D

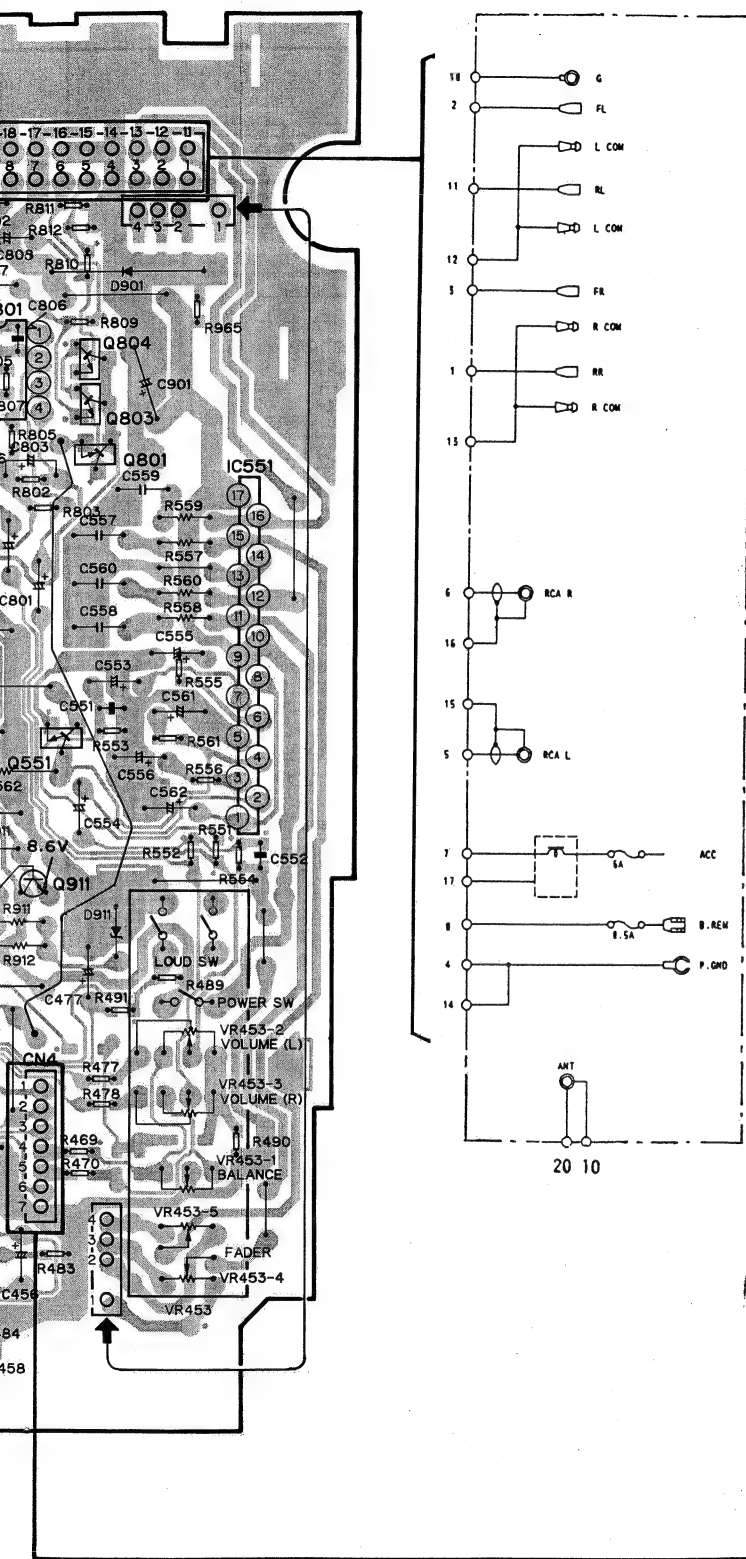
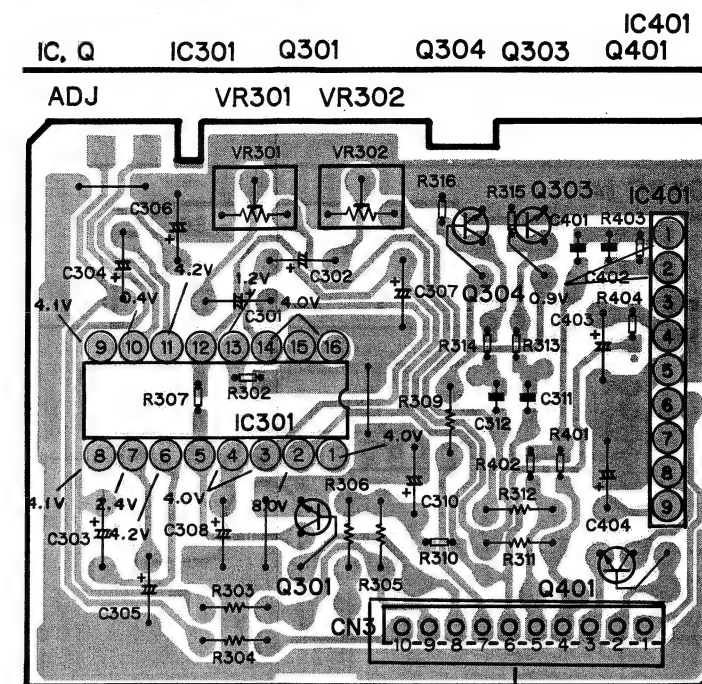


TUNER AMP P.C. BOARD

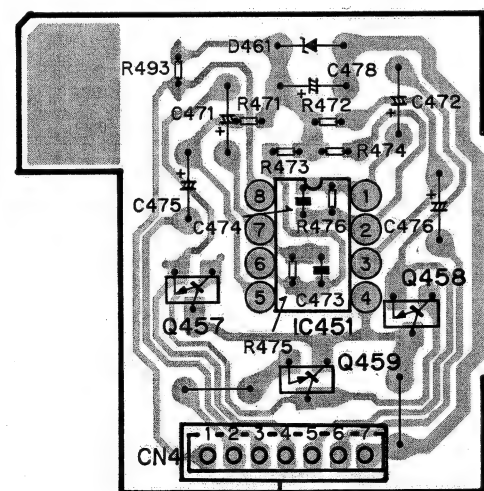
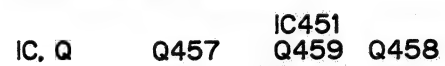




IC1			
PIN NO.	VOLTAGE	PIN NO.	VOLTAGE
1	2.1V	41	1 : 3V
6	5.2V	44	2.4V/0V
8	2.9V	46	3.3V/0V
11 - 13	4.8V	47	4V/5.2V
14	2.8V	51	0.2V
16, 17	2.3V	52	0V/6.9V
18	4.7V	53	4.9V/0V
20 - 22	3.5V	54	8.7V
23	3.8V	55	0V/2.2V
24, 25	3.5V	56	0V/4.3V
26	4.8V	58	3.4V/0V
28	0V/4.1V	59 - 62	8.6V/0V
29	0V/3.5V		
31	0V/6.4V		
32	3.4V		



VOLUME P.C.BOARD



KEY BOARD UNIT

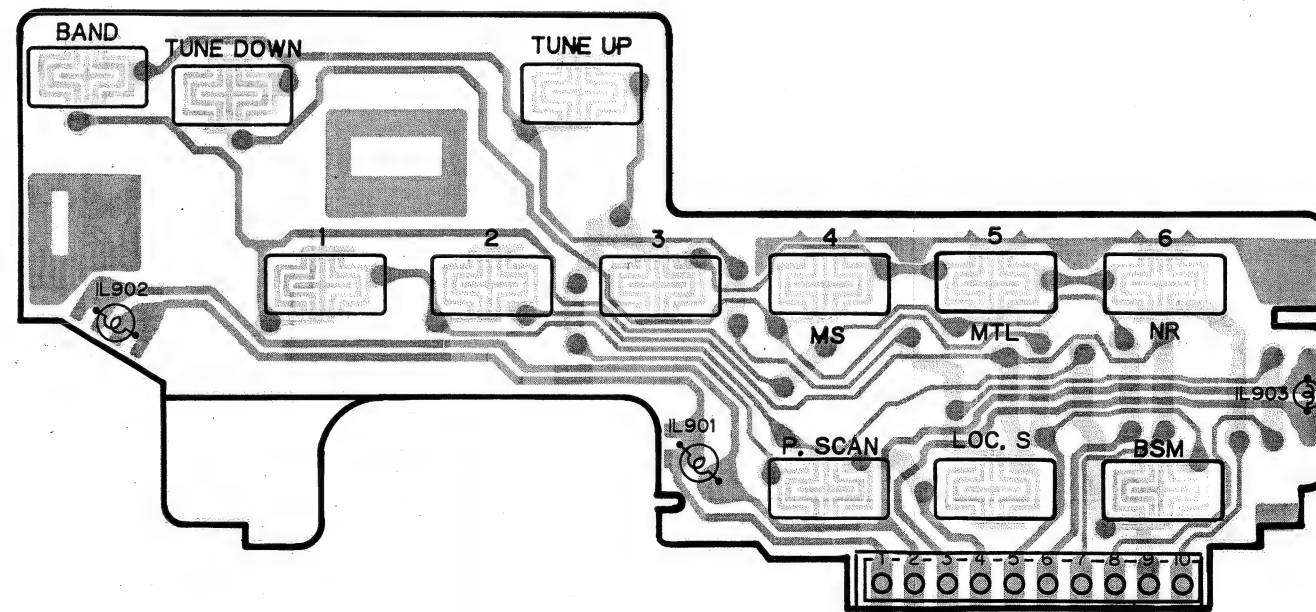


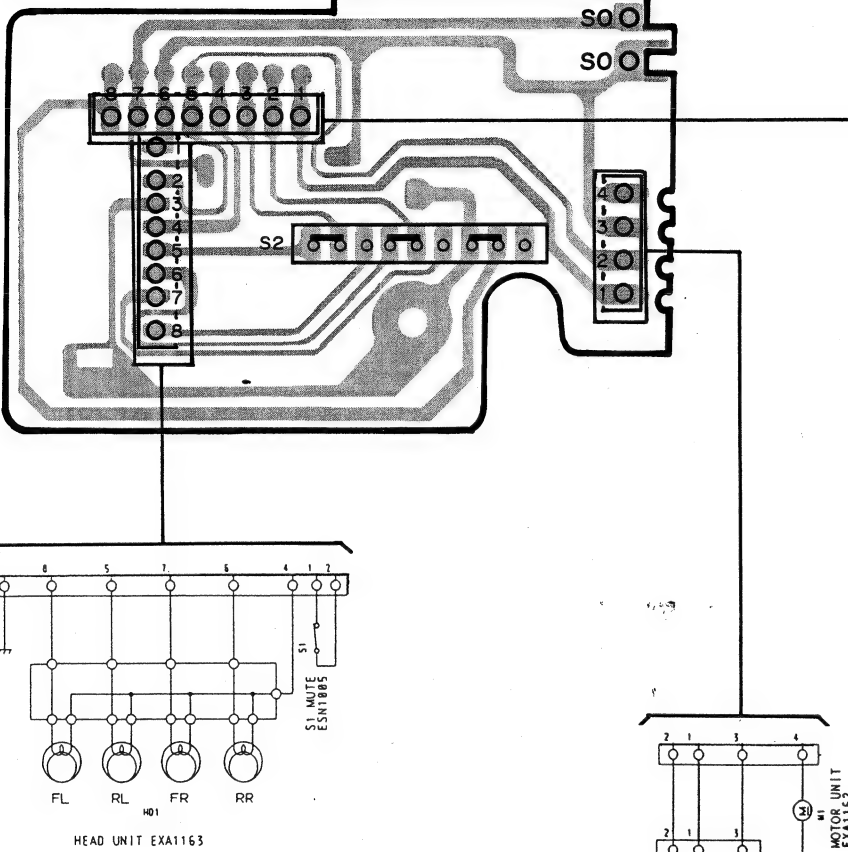
Fig. 13

12. CONNECTION DIAGRAM (KEH-2200QR)

TUNER AMP P.C.BOARD

IC, Q	Q251	Q151		IC1	Q2	Q952	Q1		Q503	Q202	Q201	IC801		Q804		IC551
	IC251	Q152	Q153			Q951	Q3	Q502		Q456	Q455	Q912	Q913	Q454	Q551		Q803
ADJ			VR151				L4	L3	T205							
			T51			L5	T1	T210	L2	T204						

P.C. BOARD (A)



P.C. BOARD (B)

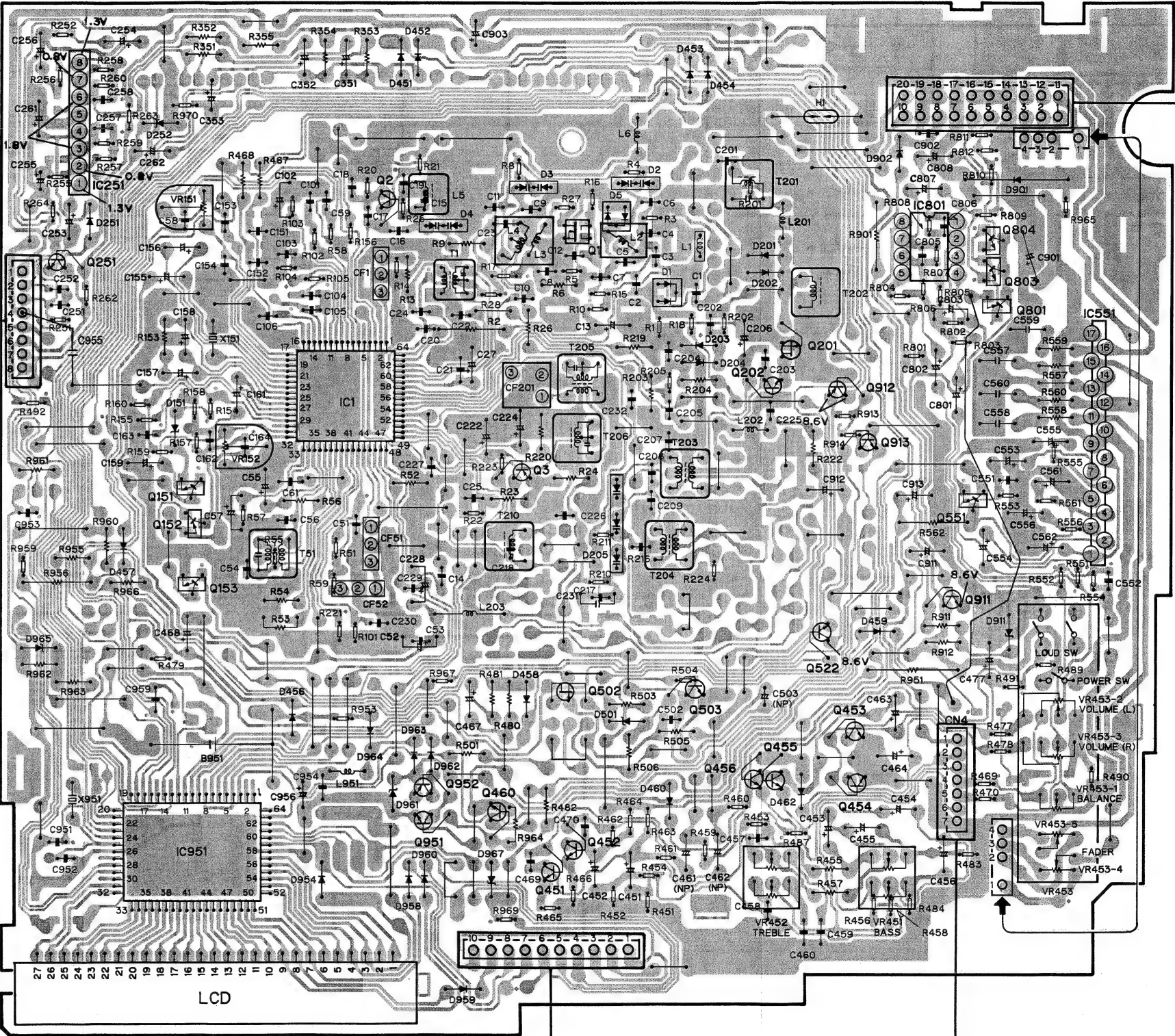
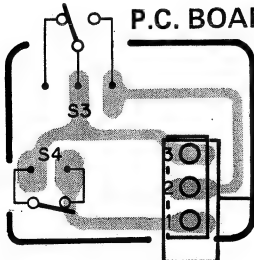
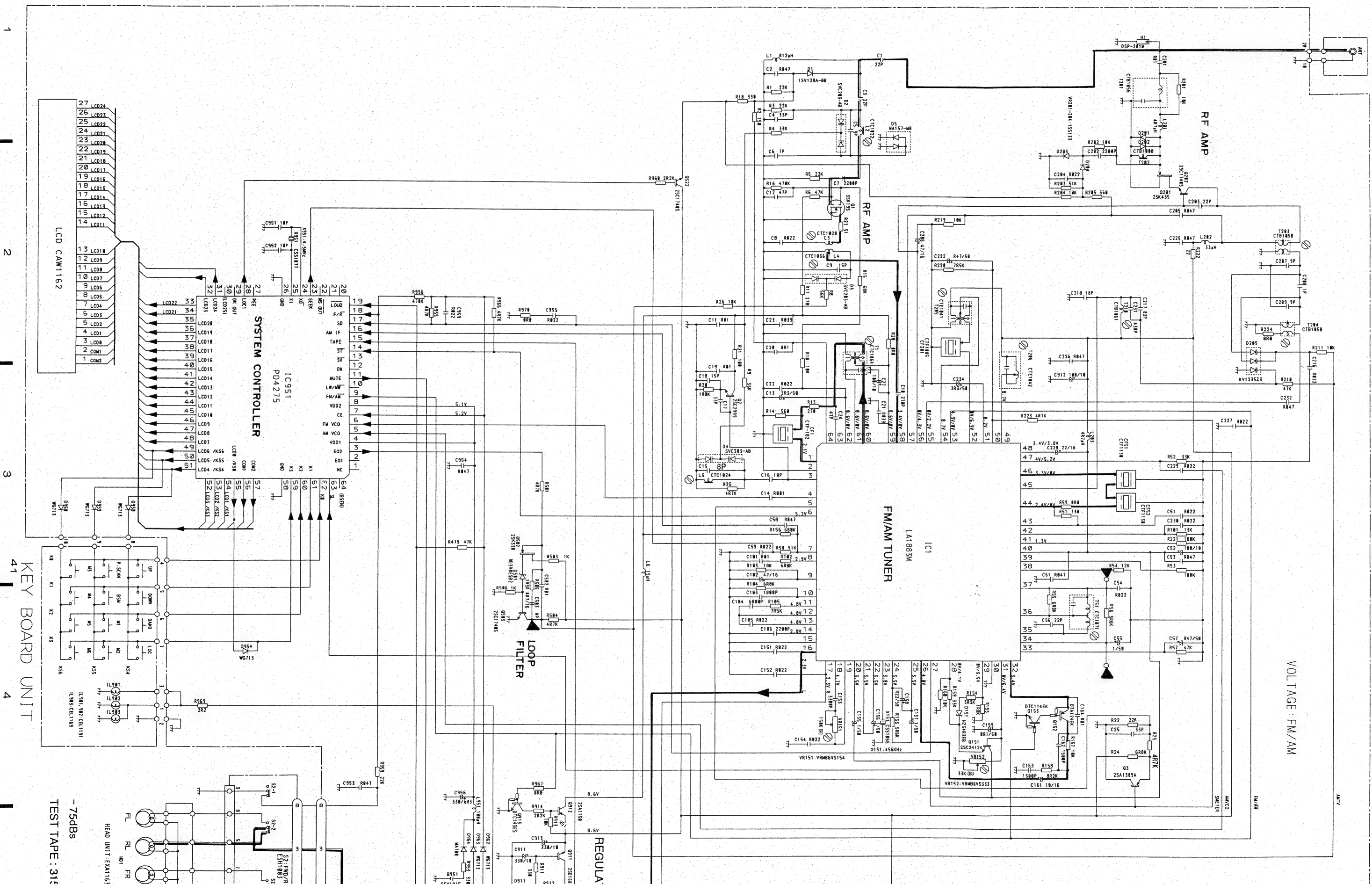


Fig. 14

13. SCHEMATIC CIRCUIT DIAGRAM (KEH-2200QR)



VOLTAGE : FM/AM

NOTE :
□ Symbol indicates a resistor.
No differentiation is made between chip resistors and discrete resistors.
—|— Symbol indicates a capacitor.
No differentiation is made between chip capacitors and discrete capacitors.

Decimal points for resistor and capacitor fixed values are expressed as:
2.2-2R2
0.022-0022

TUNER AMP UNIT
Consists of
● TUNER AMP P.C. BOARD
● VOLUME P.C. BOARD

TUNER AMP P.C. BOARD

VOLUME
PRE AMP P.C. BOARD
BUFFER AMP
IC451 : NJM2068D

POWER AMP

IC551 TAB215H-A

EQ AMP

-24dBs

-29dBs

-15.5dBs

-19.5dBs

REGULATOR

LOOP
FILTER

P.C. BOARD (A)

P.C. BOARD (B)

-75dBs
TEST TAPE : 315Hz,0dB(160nWb/m)

KEY BOARD UNIT

4

5

6

42

7

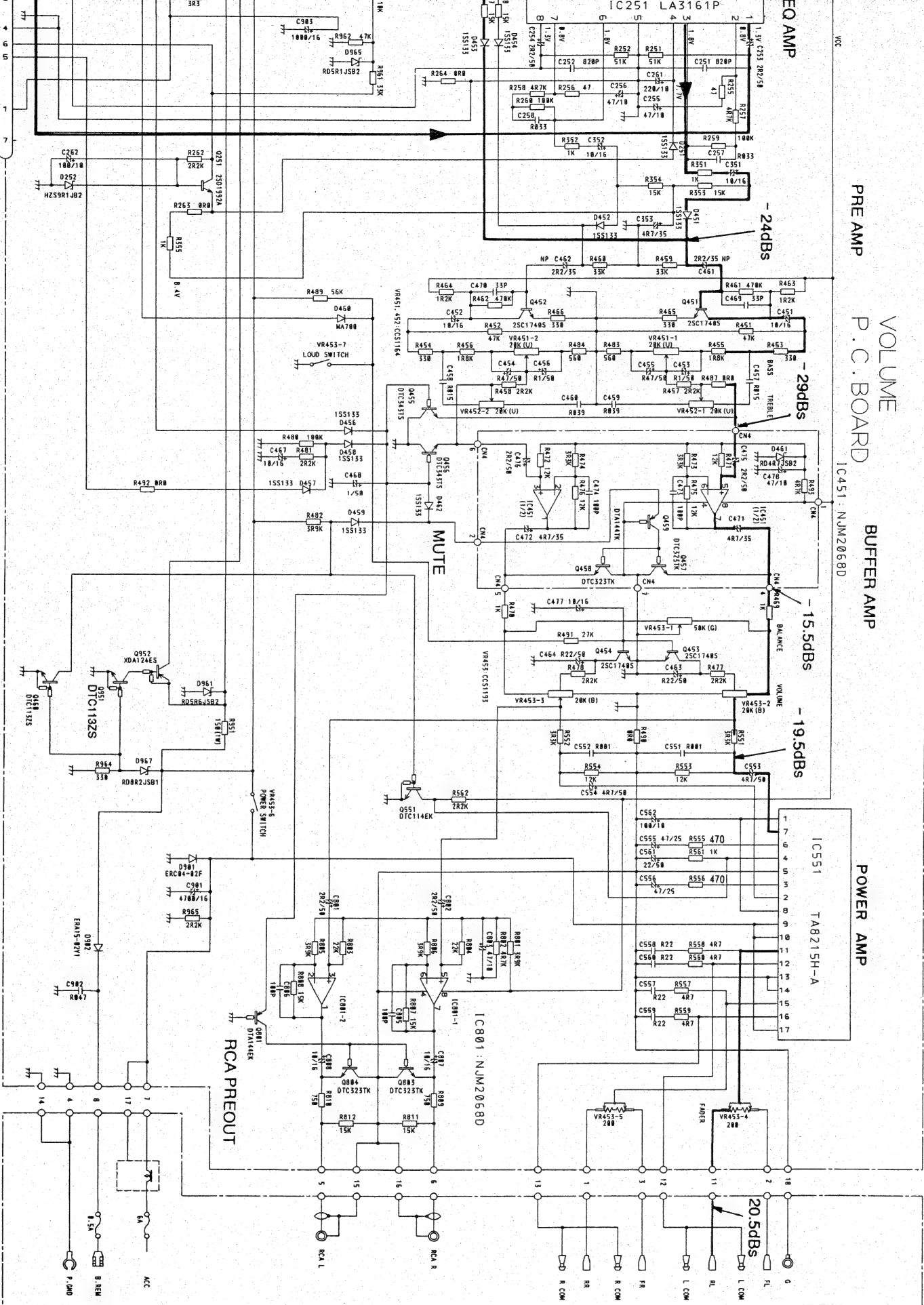
8

NOTE:
□ Symbol indicates a resistor.
No differentiation is made between chip resistors and discrete resistors.
—|— Symbol indicates a capacitor.
No differentiation is made between chip capacitors and discrete capacitors.

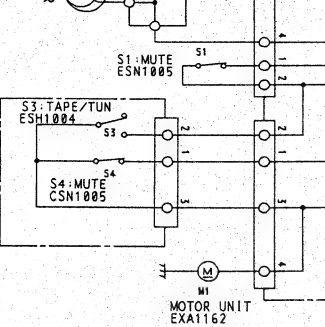
Decimal points for resistor and capacitor fixed values are expressed as:
2.2-2R2
0.022-R022

TUNER AMP UNIT
Consists of
● TUNER AMP P.C. BOARD
● VOLUME P.C. BOARD

TUNER AMP P.C. BOARD



P.C. BOARD (A)



P.C. BOARD (B)

dB(160mW/m)

Fig. 15



TEST TAPE: 315Hz 0dB(160m

HEAD UNIT: EXA1163

T

VOLTAGE: FM/AM

FM/AM

NOTE
- Symbol indicates a resistor.
No differentiation is made between chip resistors and discrete resistors.

- Symbol indicates a capacitor.
No differentiation is made between chip capacitors and discrete capacitors.

Decimal points for resistor and capacitor fixed values are expressed as:
2.2-2R2
0.022-0022

TUNER AMP UNIT
Consists of
● TUNER AMP P.C. BOARD
● VOLUME P.C. BOARD

TUNER AMP P.C. BOARD

PRE AMP

P.C. BOARD

IC451: N4M2068D

BUFFER AMP

POWER AMP

EQ AMP

-24dBs

-29dBs

-15.5dBs

-19.5dBs

IC551
TA8215H-A

REGULATOR

LOOP
FILTER

P.C. BOARD (A)

P.C. BOARD (B)

TEST TAPE: 315Hz 0dB(160mWb/m)

-75dBs

HEAD UNIT: EXA1163

MOTOR UNIT
EXA1162

KEY BOARD UNIT

5

6

46

7

8

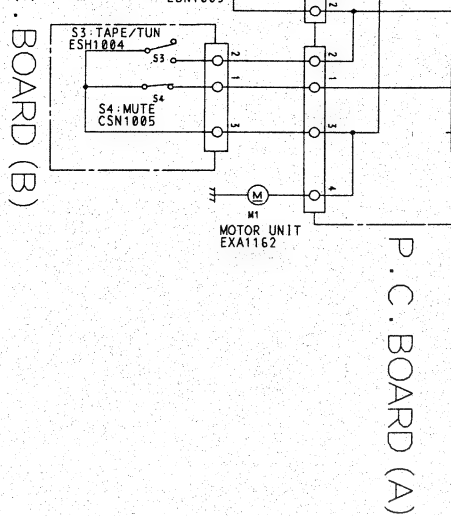
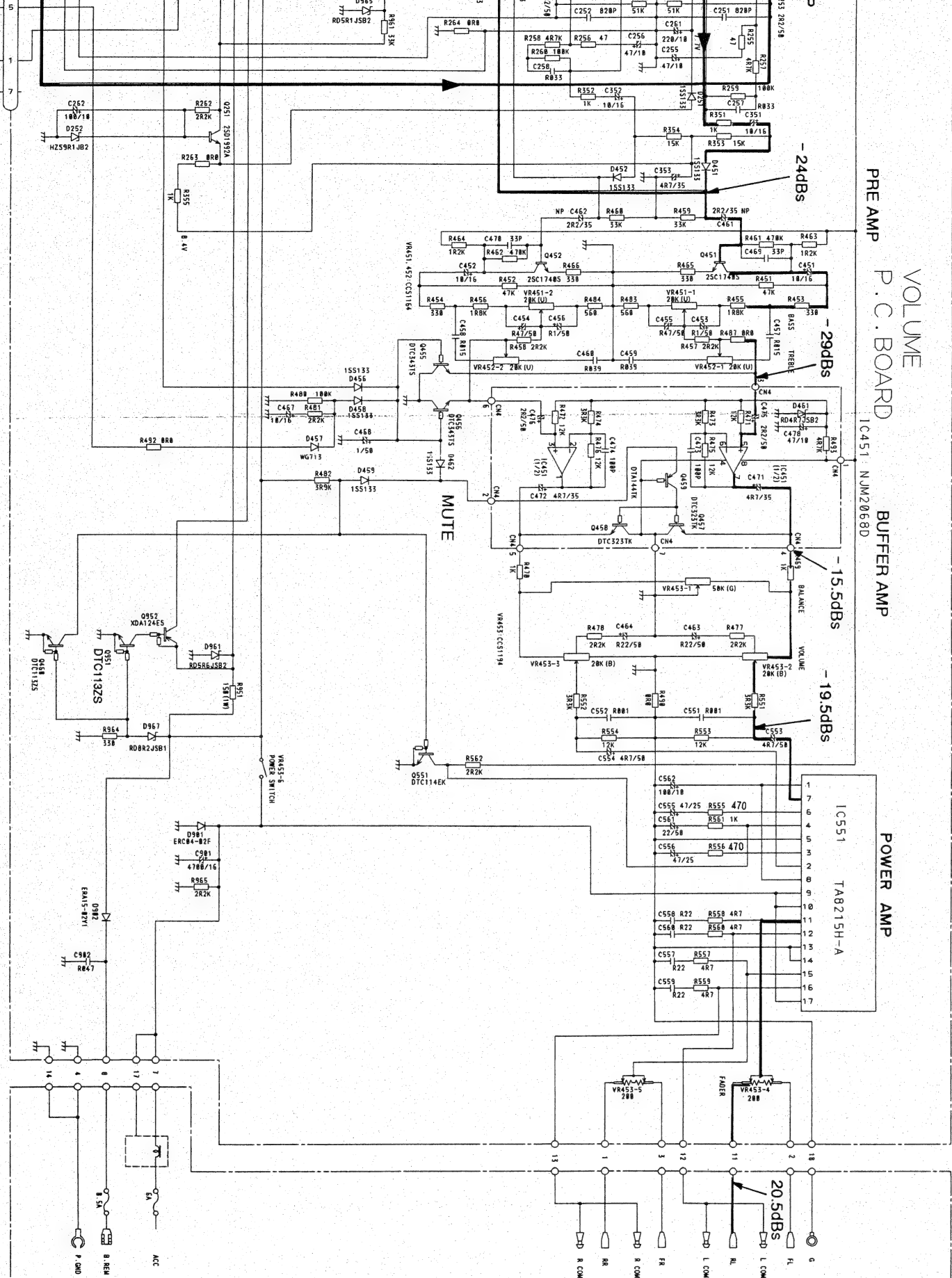
NOTE
 □ Symbol indicates a resistor.
 No differentiation is made between chip resistors and discrete resistors.
 — Symbol indicates a capacitor.
 No differentiation is made between chip capacitors and discrete capacitors.

Decimal points for resistor and capacitor fixed values are expressed as:
 2.2-2R2
 0.022-R022

TUNER AMP UNIT
Consists of
● TUNER AMP P.C. BOARD
● VOLUME P.C. BOARD

TUNER AMP P.C. BOARD

VOLUME
 PRE AMP P.C. BOARD
 BUFFER AMP
 IC451 NJM2068D

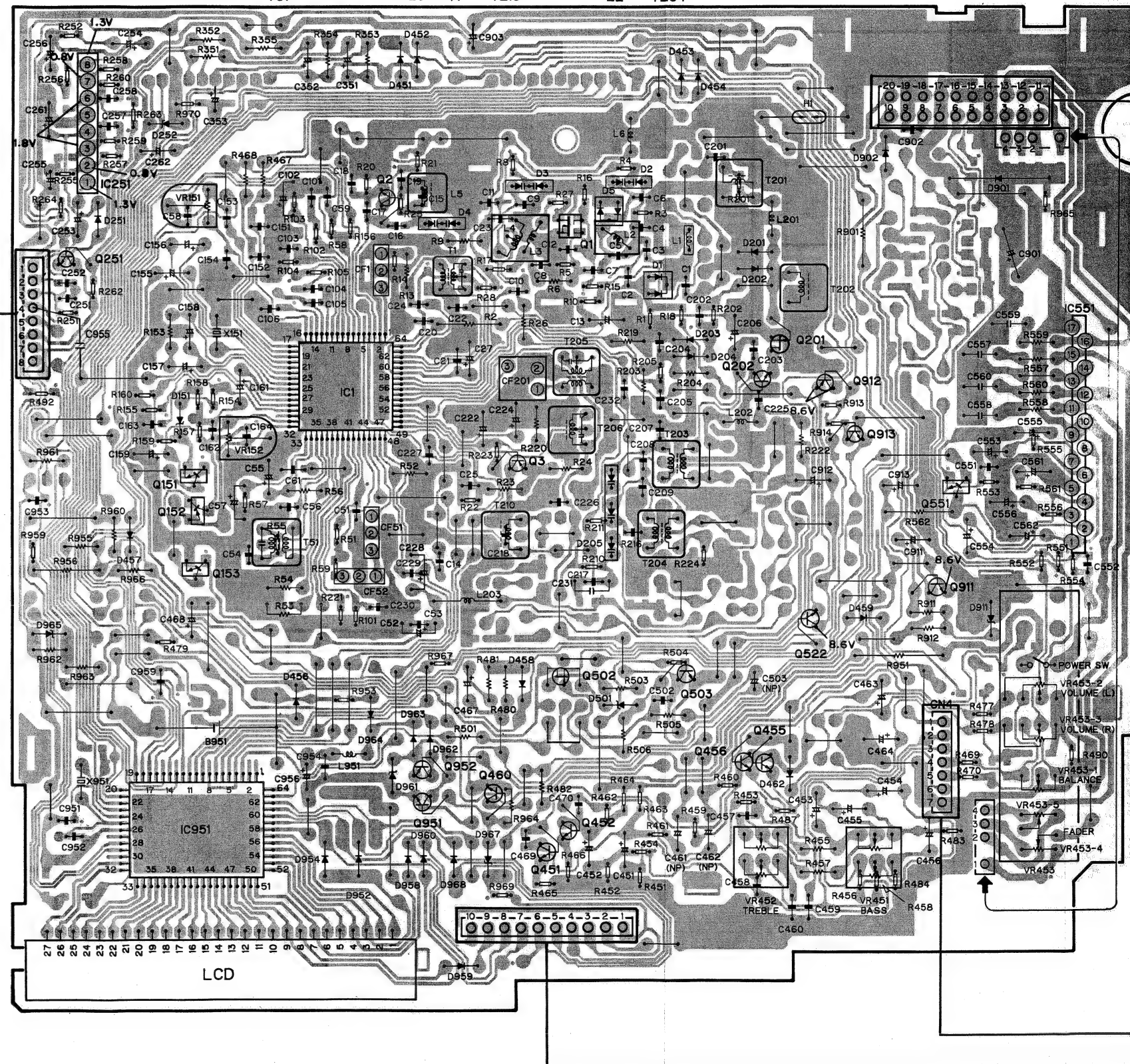


b/m)

Fig. 16

6

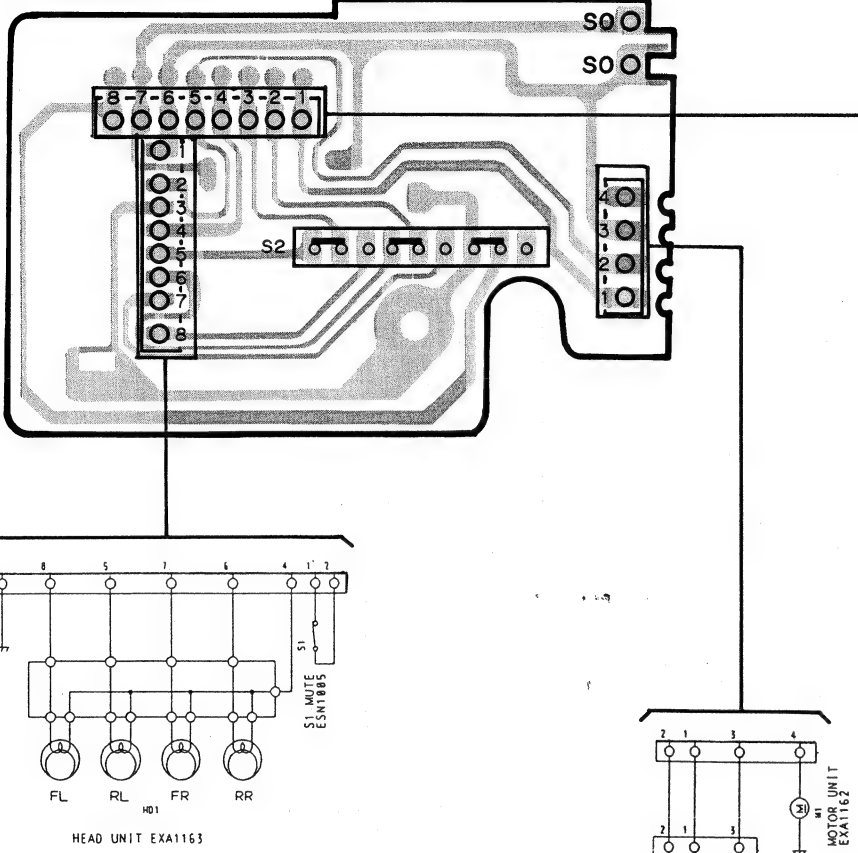
IC, Q	Q151		Q153	Q1	Q202	Q201	Q912	Q913	Q551	IC551
	Q251	Q152								
ADJ	IC251	IC951	VR151	VR152	L4	L3	T206	T205	T203	
			T51		L5	T1	T210	L2	T204	



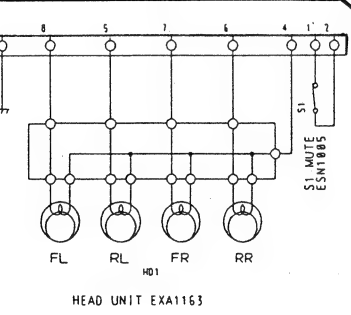
16. CONNECTION DIAGRAM (KEH-1250)

A

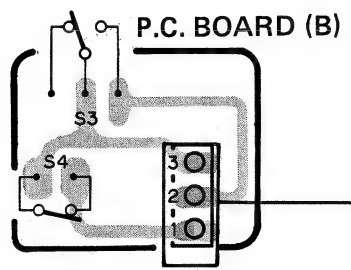
P.C. BOARD (A)



B



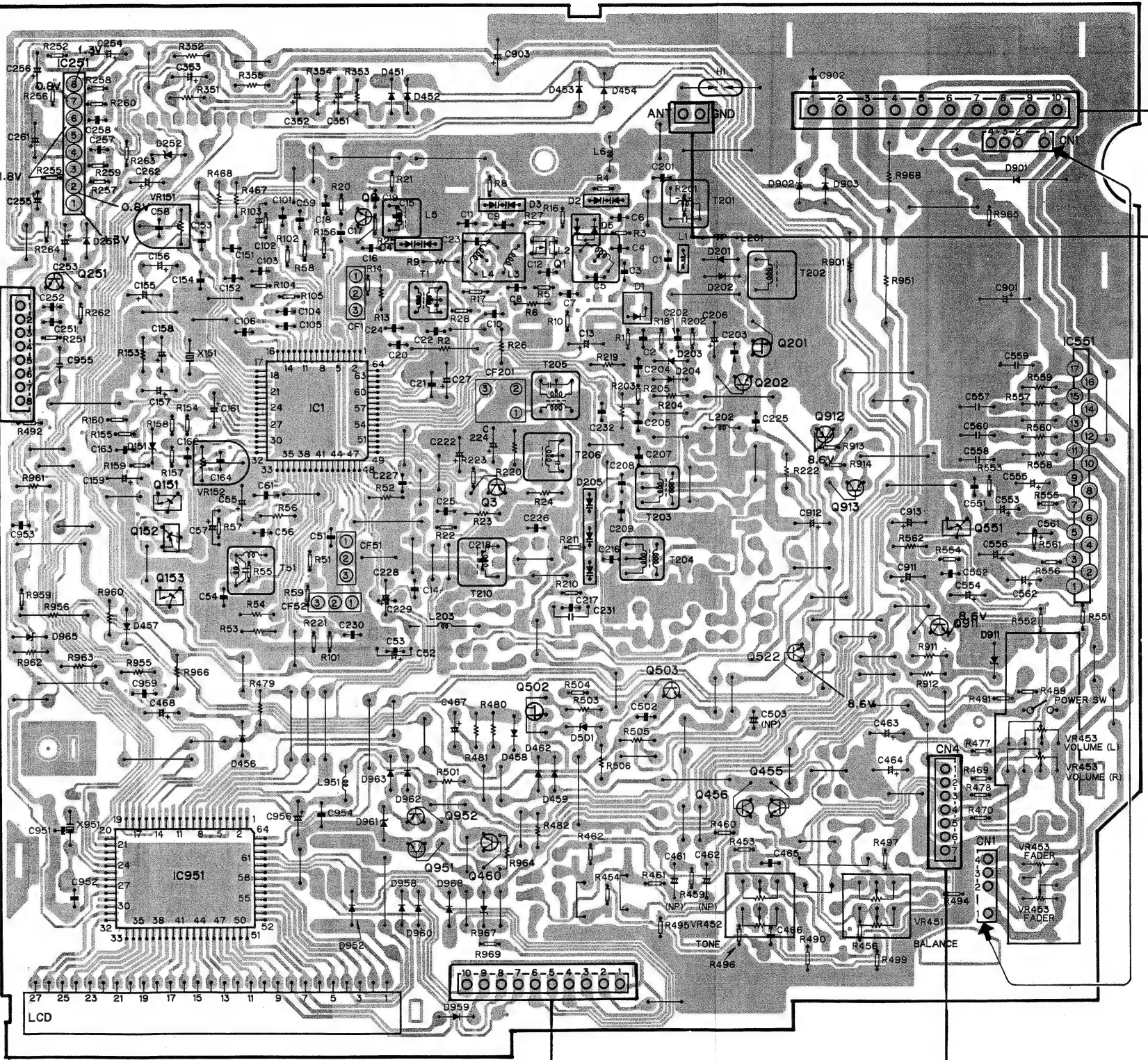
C



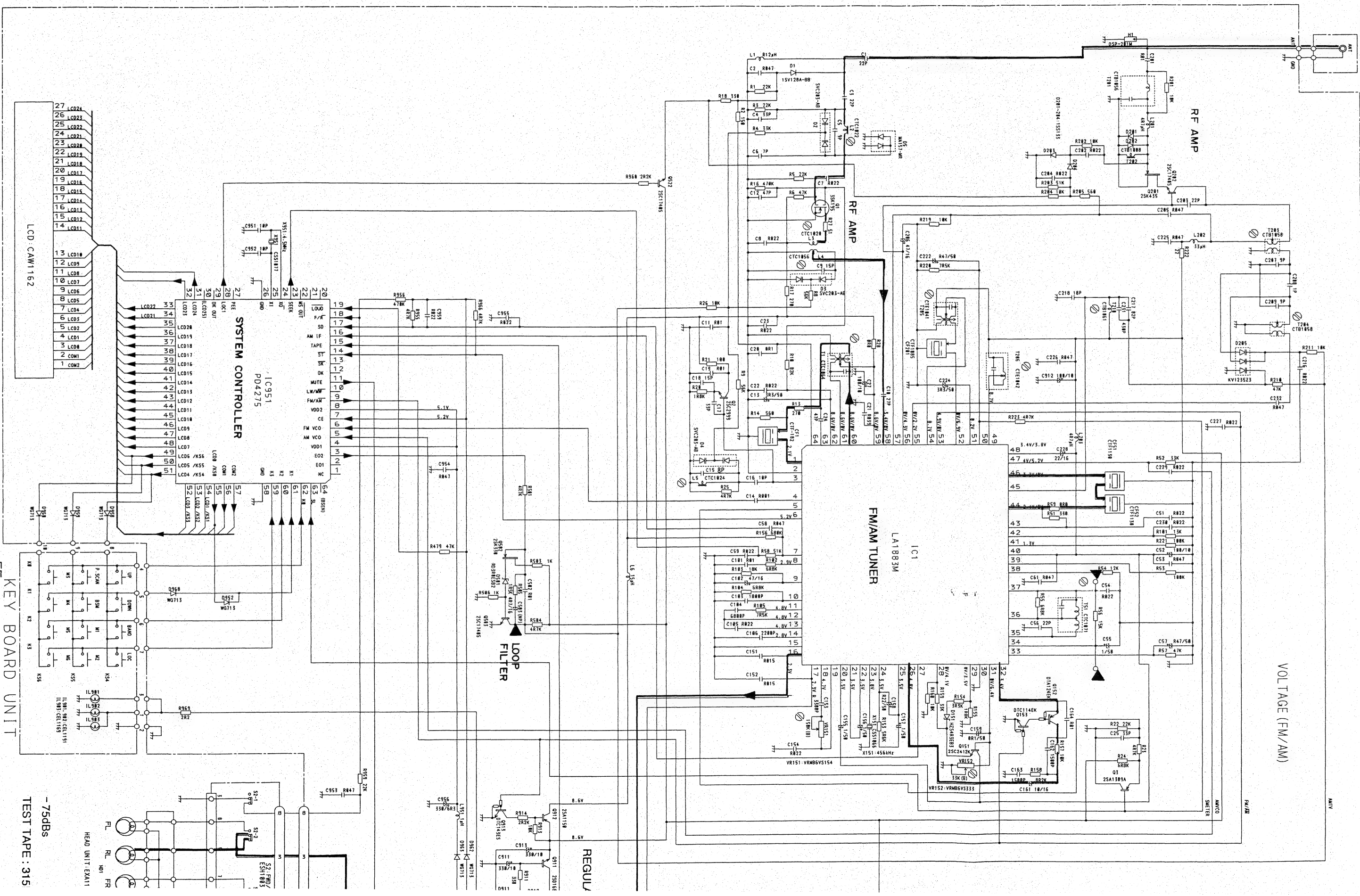
D

TUNER AMP P.C.BOARD

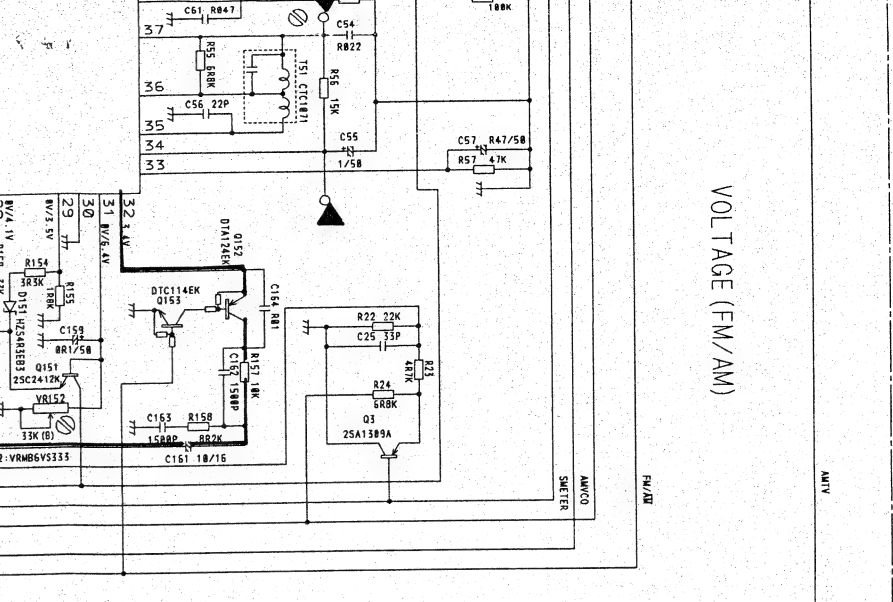
IC, Q		Q251	IC251	IC951	Q151	Q152	IC1	Q2	Q951	Q952	Q3	Q1	Q502	Q503	Q202	Q456	Q522	Q912	Q201	Q455	Q913	Q911	Q551	IC551
ADJ					VR151	VR152	T51		L5	T1	L4	L3	T206	T205	T204	T203								
											T210		L2											



17. SCHEMATIC CIRCUIT DIAGRAM (KEH-1250)



VOLTAGE (FM/AM)



NOTE:
- Symbol indicates a resistor.
- No differentiation is made between chip resistors and discrete resistors.
- Symbol indicates a capacitor.
- No differentiation is made between chip capacitors and discrete capacitors.

Decimal points for resistor and capacitor fixed values are expressed as:
2.2-2R2
0.022-R022

TUNER AMP UNIT
Consists of
● VOLUME P.C. BOARD
● TUNER AMP P.C. BOARD

TUNER AMP P.C. BOARD

BUFFER AMP

POWER AMP

EQ AMP

-30dB

P.C. BOARD

-33dB

-17.5dB

-19.5dB

VOLUME

P.C. BOARD

IC551

TAB215H-A

REGULATOR

MUTE

LOOP

FILTER

P.C. BOARD (A)

P.C. BOARD (B)

HEAD UNIT: EXA1163

MOTOR UNIT

EXA1162

HEAD UNIT: EXA1163

P.C. BOARD (B)

MOTOR UNIT

EXA1162

HEAD UNIT: EXA1163

P.C. BOARD (A)

MOTOR UNIT

EXA1162

HEAD UNIT: EXA1163

P.C. BOARD (B)

MOTOR UNIT

EXA1162

HEAD UNIT: EXA1163

P.C. BOARD (A)

MOTOR UNIT

EXA1162

HEAD UNIT: EXA1163

P.C. BOARD (B)

MOTOR UNIT

EXA1162

HEAD UNIT: EXA1163

P.C. BOARD (A)

MOTOR UNIT

EXA1162

-75dBs
TEST TAPE: 315Hz, 0dB (160mWb/m)

KEY BOARD UNIT

4

5

6

56

7

8

Decimal points for resistor and capacitor fixed values are expressed as:

— Symbol indicates a capacitor.
No differentiation is made between chip capacitors and discrete capacitors.

0.022→R022

NER AMP UNIT

- Consists of
- VOLUME P.C. BOARD
- TUNER AMP P.C. BOARD

TUNER AMP P.C. BOARD

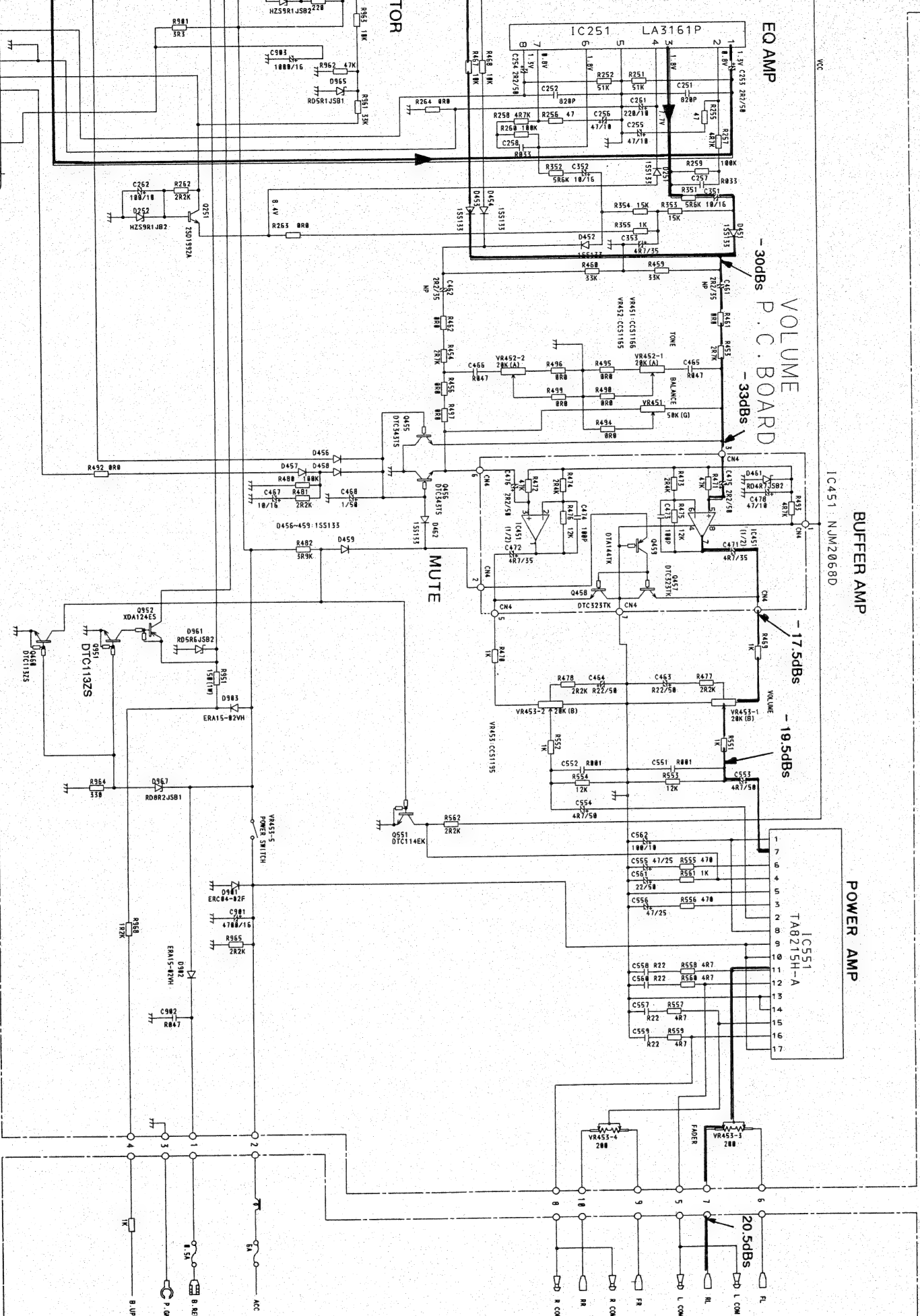
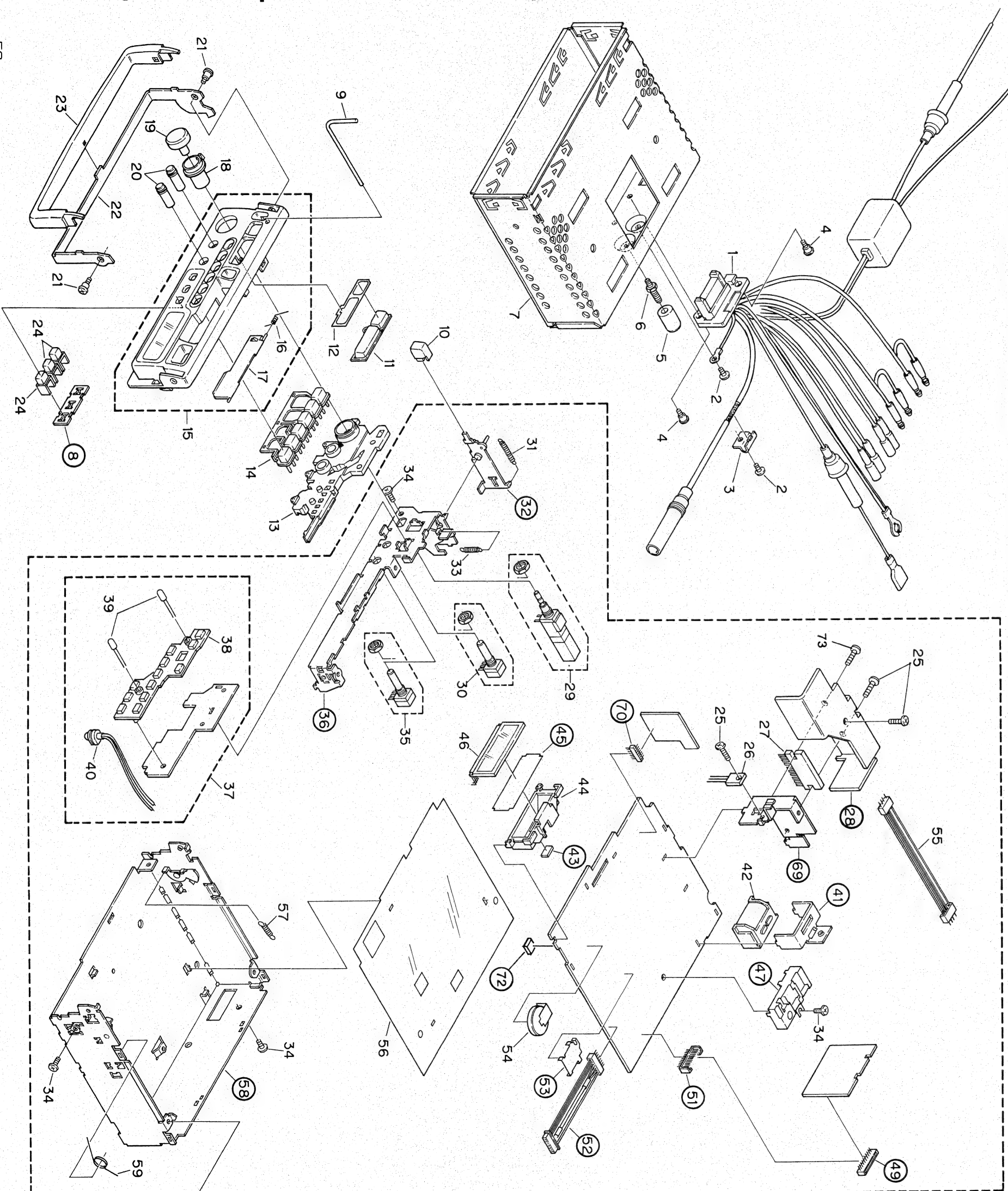


Fig. 19

18. EXPLODED VIEW
(KEH-3200QR, KEH-3250QR, KEH-2200QR, KEH-2250QR)



NOTE:

- The parts marked with "●" may need long time to supply and subject to refuse as the case may be.
- Because the parts with encircled number shown on the diagram not spare parts, we are unable to supply them in principle.

A ● Parts List (KEH-3200QR/UC)

Mark No.	Description	Part No.	Mark No.
1	Cord Assy	CDB3432	
2	Screw	BS230P060PMC	
3	Clamper	CNC2982	
4	Screw	CBA1073	
5	Bush	CNV1009	
6	Screw	CBA1002	
7	Box	CNB1553	
8	Cushion	CNM3180	
9	Shaft	CLP1064	
10	Button (QR EJECT)	CAC2548	
11	Button (BAND/TUNE)	CAC2544	
12	Spacer	CNM3275	
13	Lens	CNV3024	
14	Button (1-6)	CAC2693	
15	Grille Unit	CXA4459	
16	Spring	CBH1397	
17	Door	CAT1429	
18	Knob (FADER)	CAA1233	
19	Knob (VOLUME)	CAA1234	
20	Knob (BASS/TREBLE)	CAA1235	
21	Screw	CBH1165	
22	Handle	CNC4007	
23	Cover	CNV3022	
24	Button	CAC3097	
25	Screw	BS230P120PMC	
26	Transistor (Q 911)	2SD1684	
27	IC (IC 551)	TA8215H-A	
28	Heat Sink	CNC3896	
29	Volume (VOLUME, VR453)	CCS1193	
30	Volume (BASS, VR451)	CCS1164	
31	Spring	CBH1448	
32	Lever Unit	CXA4523	
33	Spring	CBH-846	
34	Screw	BS230P055PMC	
35	Volume (TREBLE, VR452)	CCS1164	
36	Holder Unit	CXA3709	
37	Key Board Unit	CWM2930	

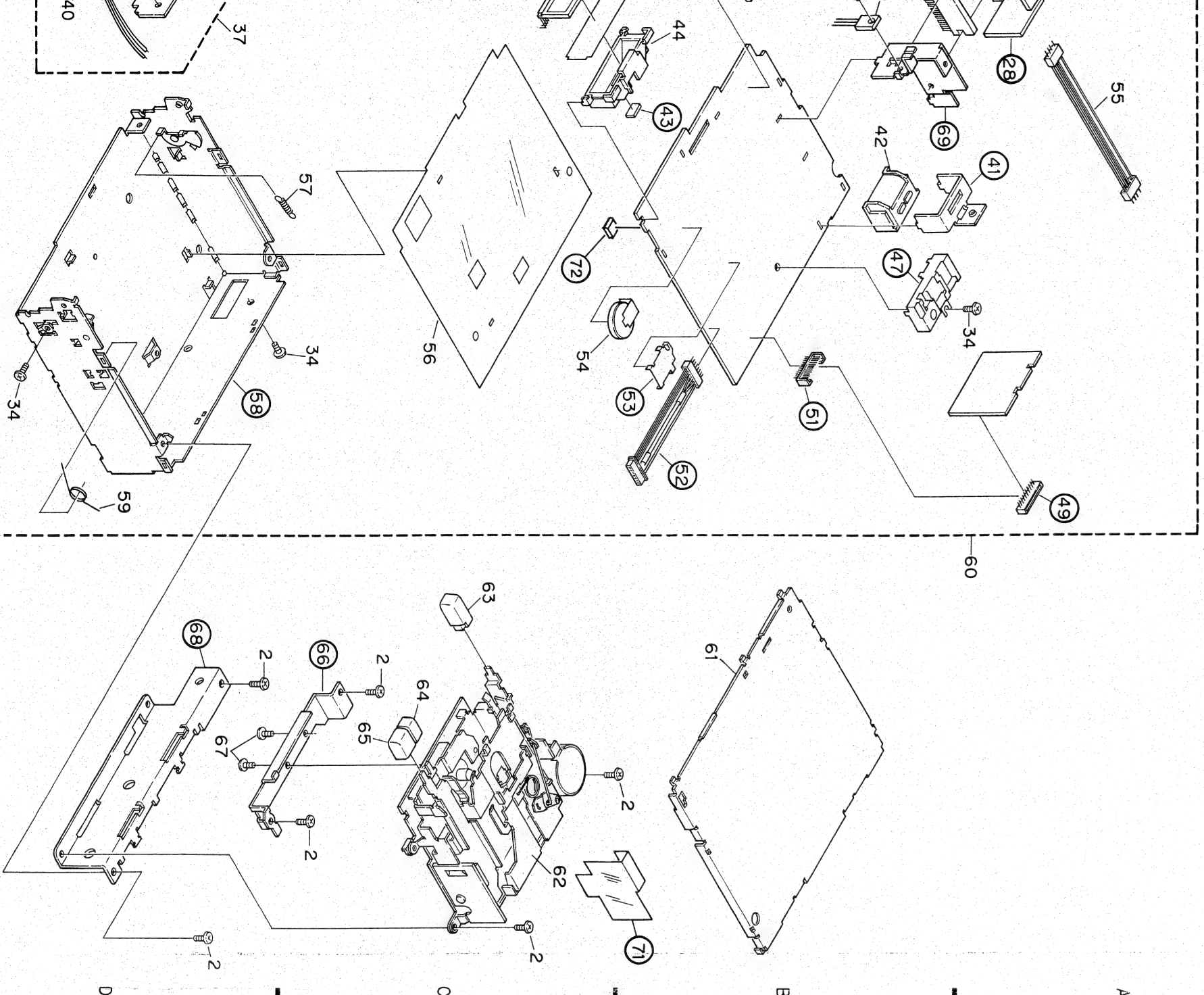


Fig. 20

- NOTE:
- The parts marked with "●" may need long time to supply and subject to refuse as the case may be.
 - Because the parts with encircled number shown on the diagram not spare parts, we are unable to supply them in principle.

A ● Parts List (KEH-3200QR/UC)

Mark No.	Description	Part No.	Mark N
1	Cord Assy	CDB3432	
2	Screw	BS230P060PMC	
3	Clamper	CNC2982	
4	Screw	CBA1073	
5	Bush	CNV1009	
6	Screw	CBA1002	
7	Box	CNB1553	
8	Cushion	CNM3180	
9	Shaft	CLP1064	
10	Button (QR EJECT)	CAC2548	

11	Button (BAND/TUNE)	CAC2544
12	Spacer	CNM3275
13	Lens	CNV3024
14	Button (1-6)	CAC2693
15	Grille Unit	CXA4459

16	Spring	CBH1397
17	Door	CAT1429
18	Knob (FADER)	CAA1233
19	Knob (VOLUME)	CAA1234
20	Knob (BASS/TREBLE)	CAA1235

21	Screw	CBH1165
22	Handle	CNC4007
23	Cover	CNV3022
24	Button	CAC3097
25	Screw	BS230P120PMC

26	Transistor (Q 911)	2SD1684
27	IC (IC 551)	TA8215H-A
28	Heat Sink	CNC3896
29	Volume (VOLUME, VR453)	CCS1193
30	Volume (BASS, VR451)	CCS1164

31	Spring	CBH1448
32	Lever Unit	CXA4523
33	Spring	CBH-846
34	Screw	BS230P055FUC
35	Volume (TREBLE, VR452)	CCS1164

● 36	Holder Unit	CXA3709
● 37	Key Board Unit	CWM2930

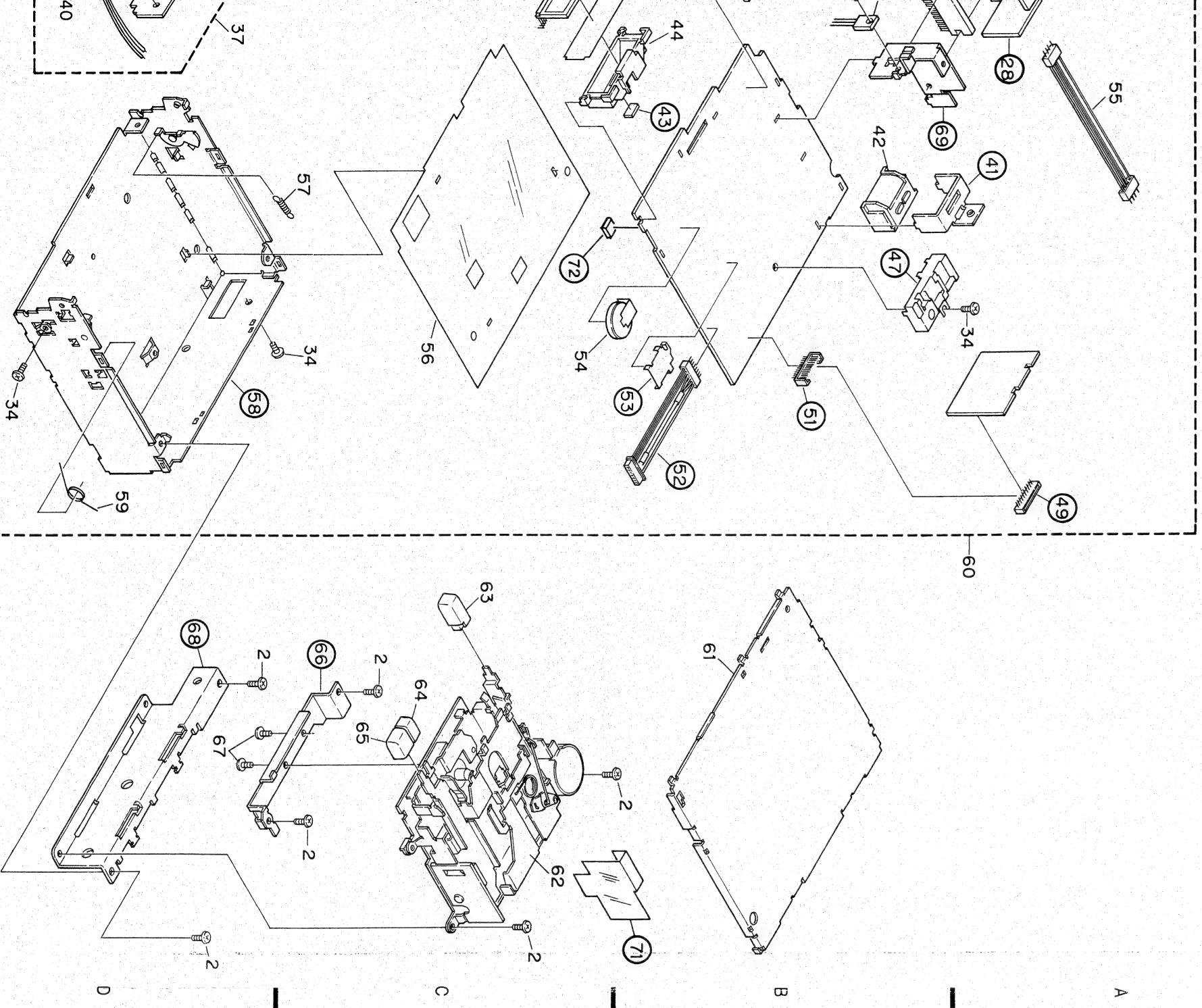


Fig. 20

- NOTE:
- The parts marked with "●" may need long time to supply and their supply is subject to refuse as the case may be.
 - Because the parts with encircled number shown on the dismantling drawing are not spare parts, we are unable to supply them in principle.

A ● Parts List (KEH-3200QR/UC)

Mark No.	Description	Part No.	Mark No.	Description	Part No.
1	Cord Assy	CDE3432	38	Switch	CNV2519
2	Screw	BSZ30P060FMC	39	Lamp (1L 901, 902)	CEL1191
3	Clamper	CNC2982	40	Lamp (1L 903)	CEL1169
4	Screw	CBA1073			
5	Bush	CNV1009	41	Holder	CNC3260
6	Screw	CBA1002	42	Connector	CKS1977
7	Box	CNB1553	43	Spacer	CNM2914
8	Cushion	CNM3180	44	Holder	CNV2521
9	Shaft	CLP1064	45	Plate	CNM3285
10	Button (QR EJECT)	CAC2548	46	LCD	CAM1162
11	Button (BAND/TUNE)	CAC2544	47	Case	CNC3276
12	Spacer	CNM3275	48	.....
13	Lens	CNV3024	49	Connector	CKS1997
14	Button (1-6)	CAC2693	50	.....
15	Grille Unit	CXA4459	51	Plug	CKS1986
16	Spring	CBH1397	52	Connector	CDE2884
17	Door	CAT1429	53	Shield	CNC3275
18	Knob (FADER)	CAA1233	54	Battery (B 951)	CEX1015
19	Knob (VOLUME)	CAA1234	55	Connector	CDE3527
20	Knob (BASS/TREBLE)	CAA1235	56	Insulator	CNM3153
21	Screw	CBH1165	57	Spring	CBH1447
22	Handle	CNC4007	58	Chassis Unit	CXA4426
23	Cover	CNV3022	59	Spring	CBH1366
24	Button	CAC3097	60	Tuner Amp Assy	CNM2903
25	Screw	BSZ30P120FMC			
26	Transistor (Q 911)	2SD1694	61	Case	CNB1576
27	IC (IC 551)	TA8215H-A	62	Cassette Mechanism Assy	EKK1720
28	Heat Sink	CNC3896	63	Button (EJECT)	CAC2545
29	Volume (VOLUME, VR453)	CCS1193	64	Button (REW)	CAC2547
30	Volume (BASS, VR451)	CCS1164	65	Button (FF)	CAC2546
31	Spring	CBH1448	66	Bracket	CNC3265
32	Lever Unit	CXA4523	67	Screw	BSZ26P060FMC
33	Spring	CBH-846	68	Bracket	CNC3264
34	Screw	BSZ30P055FUC	69	Holder	CNC3897
35	Volume (TREBLE, VR452)	CCS1164	70	Plug	CKS1616
36	Holder Unit	CXA3709	71	Insulator	CNM3036
37	Key Board Unit	CMM2930	72	Spacer	CNN-625
			73	Screw	BSZ30P100FMC

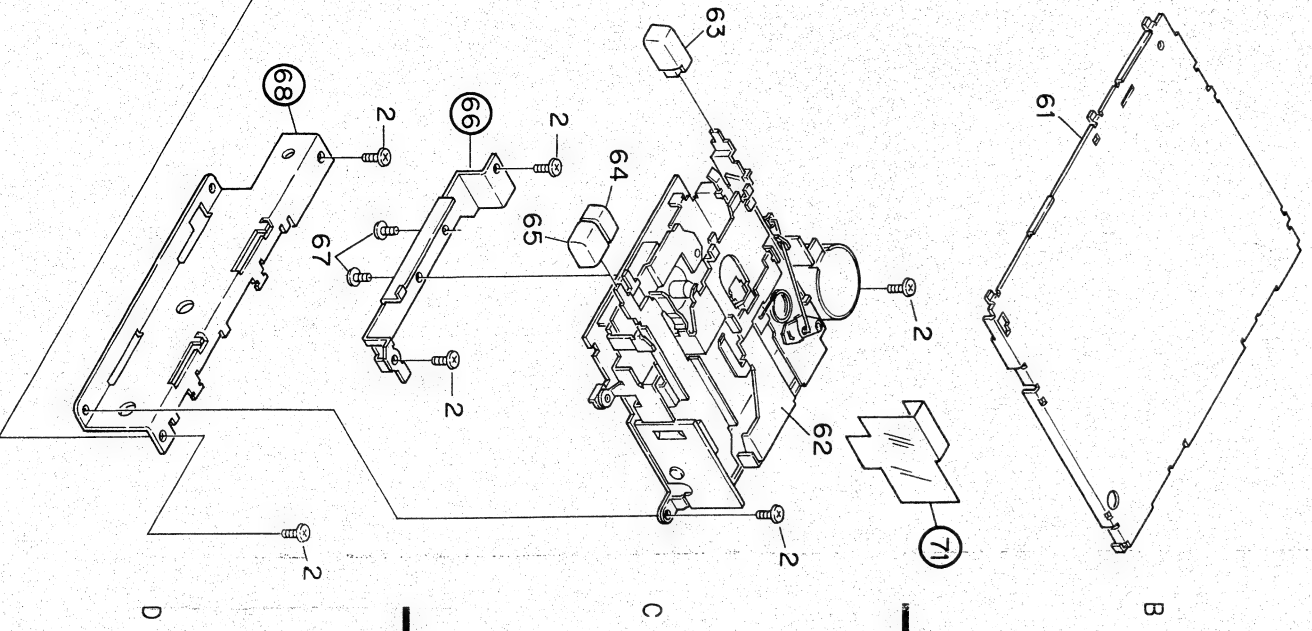


Fig. 20

- The KEH-3250QR/ES, KEH-2200QR/UC and KEH-2250QR/ES Parts Lists enumerate the parts which differ from those enumerated in the KEH-3200QR/UC Parts List only.
The parts other than those enumerated in the former are identical with those in the latter, to which you are requested to refer, accordingly.
The KEH-3200QR/UC Parts List is given on page 56.

Mark No. Description	KEH-3200QR/UC	KEH-3250QR/ES	KEH-2200QR/UC	KEH-2250QR/ES
	Part No.	Part No.	Part No.	Part No.
14 Button(1-6)	CAC2693	CAC2692	CAC2670	CAC2670
15 Grille Unit	CXA4459	CXA4460	CXA4464	CXA4465
17 Door	CAT1429	CAT1404	CAT1429	CAT1404
29 Volume(VOLUME, VR453	CCS1193	CCS1193	CCS1193	CCS1194
49 Connector	CKS1997	CKS1997	.....	.....
51 Plug	CKS1986	CKS1986	.....	.....
52 Connector	CDE2884	CDE2884	CDE3064	CDE3064
● 60 Tuner Amp Assy	CWM2903	CWM2904	CWM2909	CWM2910
61 Case	CNB1576	CNB1552	CNB1576	CNB1552
● 62 Cassette Mechanism Assy	EXK1720	EXK1720	EXK1710	EXK1710

19. EXPLODED VIEW (KEH-1250)

• Parts List (KEH-1250/ES)

Mark No.	Description	Part No.	Mark No.	Description	Part No.
1	Cord Assy	CDE3167	43	Spacer	CNM2914
2	Screw	BSZ30P060FMC	44	Holder	CNV2521
3	Holder	CNC2913	45	Plate	CNM3285
4-7	.....		46	LCD	CAW1162
8	Cushion	CNM3180	47	Case	CNC3276
9	Resistor	RS1/2P102JL	48	Antenna Cable	CDH1115
10	Cap	CNS1472	49	.....
11	Button (BAND/TUNE)	CAC2544	50	Plug	CKS1222
12	Spacer	CNM3275	51	.....
13	Lens	CNV3024	52	Connector	CDE3064
14	Button (1-6)	CAC2670	53	Shield	CNC3275
15	Grille Unit	CXA4466	54	.....
16	Spring	CBH1397	55	Connector	CDE3527
17	Door	CAT1404	56	Insulator	CNM3154
18	Knob (FADER)	CAA1233	57	.....
19	Knob (VOLUME)	CAA1234	58	Chassis	CNA1397
20	Knob (TONE/BALANCE)	CAA1235	59	.....
21-23	.....		60	Tuner Amp Assy	CWM2911
24	Button	CAC3097	61	Case	CNB1588
25	Screw	BSZ30P120FMC	62	Cassette Mechanism Assy	EXK1710
26	Transistor (Q 911)	2SD1684	63	Button (EJECT)	CAC2545
27	IC (IC 551)	TA8215H-A	64	Button (REW)	CAC2547
28	Heat Sink	CNC3896	65	Button (FF)	CAC2546
29	Volume (VOLUME, VR453)	CCS1195	66	Bracket	CNC3265
30	Volume (TONE, VR451)	CCS1166	67	Screw	BSZ26P060FMC
31-33	.....		68	Bracket	CNC3264
34	Screw	BSZ30P055FUC	69	Holder	CNC3897
35	Volume (BALANCE, VR452)	CCS1165	70	Plug	CKS1616
36	Holder	CNC3895	71	Insulator	CNM3036
37	Key Board Unit	CWM2930	72	Spacer	CNN-625
38	Switch	CNV2519	73	Screw	BSZ30P100FMC
39	Lamp (IL 901, 902)	CEL1191	74	Spacer	CNM3356
40	Lamp (IL 903)	CEL1169	75	Spacer	CNM3357
41	Holder	CNC4040	76	Spacer	CNM3358
42	Connector	CKS-467			

● Exploded View

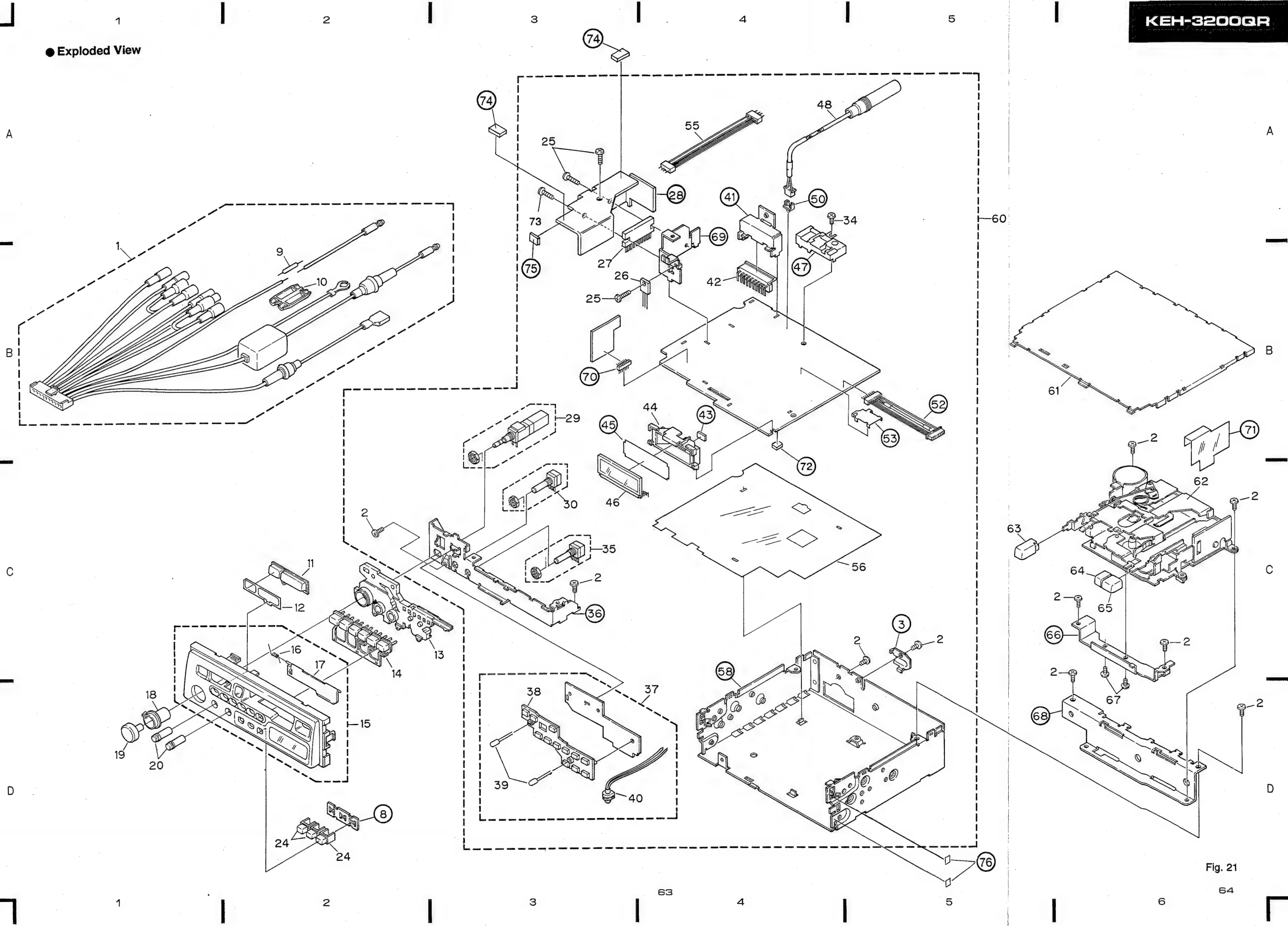


Fig. 21

20. CASSETTE MECHANISM ASSY EXPLODED VIEW
(KEH-3200QR, KEH-3250QR)

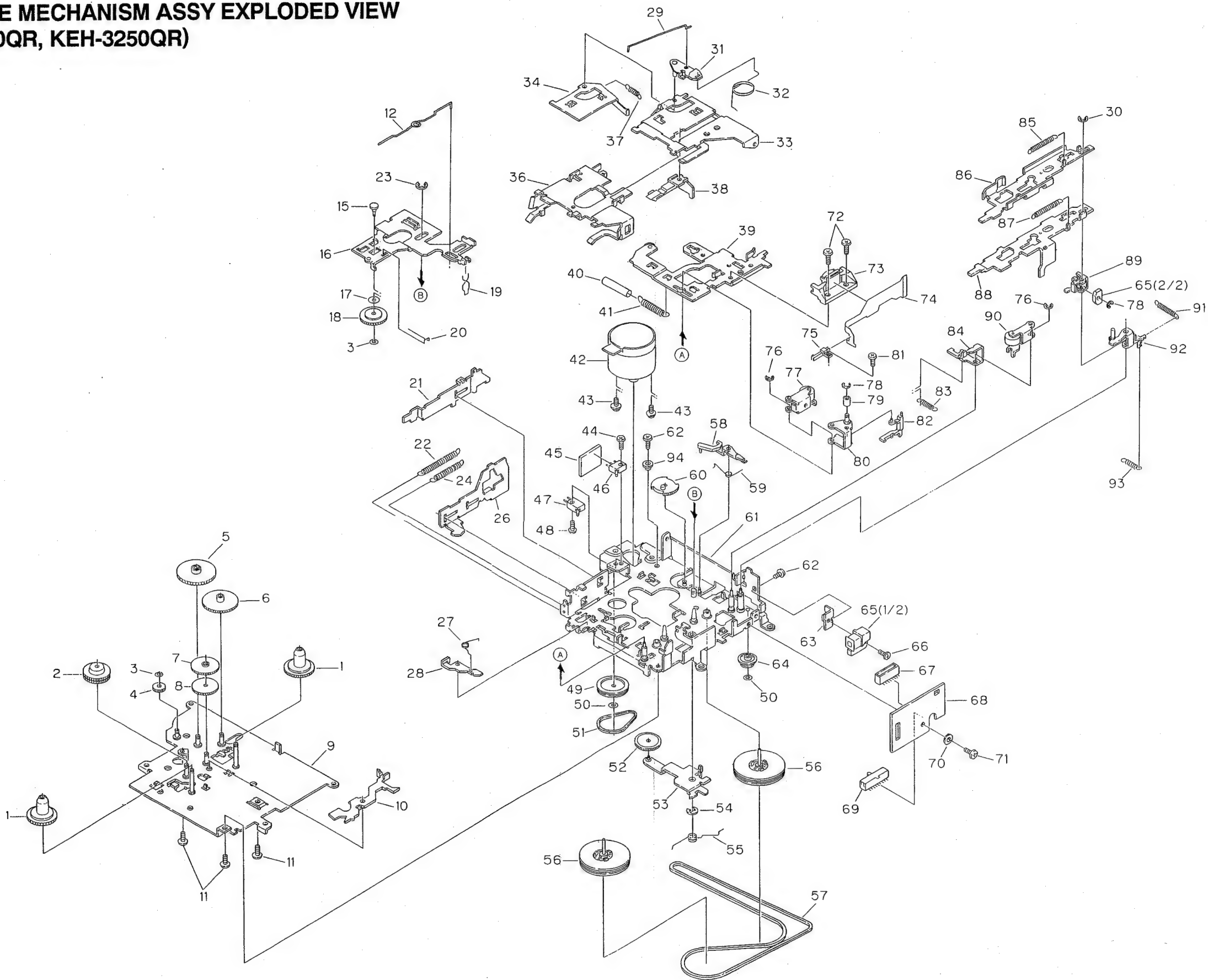


Fig. 22

• Parts List

Mark No.	Description	Part No.	Mark No.	Description	Part No.
1	Reel Unit	EXA1204	41	Spring	EBH1363
2	Gear Unit	EXA1200	42	Motor Unit	EXA1162
3	Washer	CBF1037	43	Screw	PMS26P025FUC
4	Gear	ENV1230	44	Screw	CBA1054
5	Gear	ENV1203	45	Gathering P.C. Board	ENX1005
6	Gear	ENV1204	46	Switch	ESH1004
7	Gear	ENV1273	47	Switch	CSN1005
8	Gear	ENV1211	48	Screw	CBA1025
9	Sub Chassis Unit	EXA1197	49	Gear	ENV1229
10	Arm	ENV1210	50	Washer	CBF1038
11	Screw	BMZ20P025FMC	51	Belt	ENT1020
12	Spring	EBH1366	52	Gear	ENV1209
13	.....		53	Arm Unit	EXA1155
14	.....		54	Washer	YE30FUC
15	Shaft	ELA1266	55	Spring	EBH1310
16	Lever	ENC1269	56	Flywheel Unit	EXA1161
17	Washer	EBF1015	57	Belt	ENT1018
18	Gear	ENV1208	58	Arm	ENV1206
19	Spring	EBH1361	59	Spring	EBH1317
20	Spring	EBH1362	60	Gear	ENV1205
21	Lever	ENC1255	61	Chassis Unit	EXA1196
22	Spring	EBH1359	62	Screw	JFZ20P025FNI
23	Washer	YE25FUC	63	Bracket	ENC1250
24	Spring	EBH1358	64	Pulley	ENV1207
25	.....		65	Solenoid	EXP1010
26	Lever	ENC1256	66	Screw	EBA1023
27	Spring	EBH1373	67	Plug	CKS1055
28	Arm	ENC1248	68	Gathering P.C. Board	ENX1004
29	Spring	EBH1308	69	Switch	ESH1003
30	Washer	YE15FUC	70	Washer	WH23FMC
31	Arm Unit	EXA1198	71	Screw	BSZ23P040FMC
32	Spring	EBH1374	72	Screw	CBA1015
33	Frame	ENC1204	73	Head Unit	EXA1163
34	Arm	ENC1263	74	P.C. Board	ENP1042
35	.....		75	Switch	ESN1005
36	Holder	ENC1257	76	Washer	YE20FUC
37	Spring	EBH1364	77	Pinch Roller Unit	EXA1194
38	Lever	ENV1222	78	Washer	YE12FUC
39	Head Base Unit	EXA1203	79	Roller	ELA1247
40	Tube		80	Arm Unit	EXA1166

Mark No.	Description	Part No.
81	Screw	CBA1038
82	Arm	ENV1227
83	Spring	EBH1368
84	Arm	ENC1266
85	Spring	EBH1322
86	Lever	ENC1228
87	Spring	EBH1365
88	Lever	ENC1229
89	Arm Unit	EXA1158
90	Pinch Roller Unit	EXA1193
91	Spring	EBH1375
92	Arm Unit	EXA1157
93	Spring	EBH1345
94	Collar	ELA1267

21. CASSETTE MECHANISM ASSY EXPLODED VIEW
(KEH-2200QR, KEH-2250QR, KEH-1250)

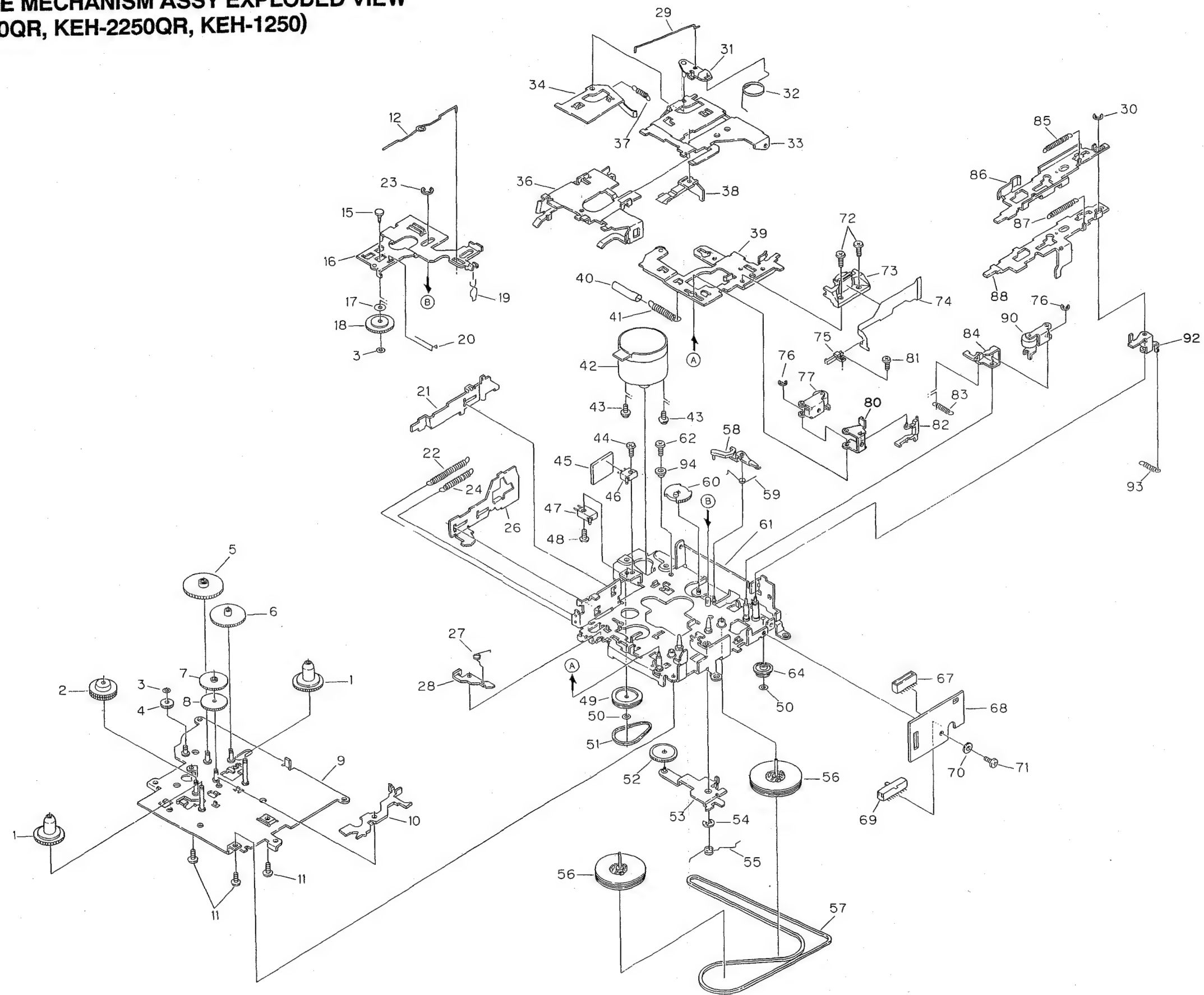


Fig. 23

• Parts List

Mark No.	Description	Part No.	Mark No.	Description	Part No.
1	Reel Unit	EXA1104	41	Spring	EBH1363
2	Gear Unit	EXA1200	42	Motor Unit	EXA1162
3	Washer	CBF1037	43	Screw	PMS26P025FUC
4	Gear	ENV1230	44	Screw	CBA1054
5	Gear	ENV1203	45	Gathering P.C. Board	ENX1005
6	Gear	ENV1204	46	Switch	ESH1004
7	Gear	ENV1273	47	Switch	CSN1005
8	Gear	ENV1211	48	Screw	CBA1025
9	Sub Chassis Unit	EXA1197	49	Gear	ENV1229
10	Arm	ENV1210	50	Washer	CBF1038
11	Screw	BMZ20P025FMC	51	Belt	ENT1020
12	Spring	EBH1366	52	Gear	ENV1209
13	.....		53	Arm Unit	EXA1155
14	.....		54	Washer	YE30FUC
15	Shaft	ELA1266	55	Spring	EBH1310
16	Lever	ENC1269	56	Flywheel Unit	EXA1161
17	Washer	EBF1015	57	Belt	ENT1018
18	Gear	ENV1208	58	Arm	ENV1206
19	Spring	EBH1361	59	Spring	EBH1317
20	Spring	EBH1362	60	Gear	ENV1205
21	Lever	ENC1255	61	Chassis Unit	EXA1196
22	Spring	EBH1359	62	Screw	JFZ20P025FNI
23	Washer	YE25FUC	63	.....
24	Spring	EBH1358	64	Pulley	ENV1207
25	.....		65	.....
26	Lever	ENC1256	66	.....
27	Spring	EBH1373	67	Plug	CKS1055
28	Arm	ENC1248	68	Gathering P.C. Board	ENX1004
29	Spring	EBH1308	69	Switch	ESH1003
30	Washer	YE15FUC	70	Washer	WH23FMC
31	Arm Unit	EXA1198	71	Screw	BSZ23P040FMC
32	Spring	EBH1374	72	Screw	CBA1015
33	Frame	ENC1204	73	Head Unit	EXA1163
34	Arm	ENC1263	74	P.C. Board	ENP1042
35	.....		75	Switch	ESN1005
36	Holder	ENC1257	76	Washer	YE20FUC
37	Spring	EBH1364	77	Pinch Roller Unit	EXA1194
38	Lever	ENV1222	78	.....
39	Head Base Unit	EXA1203	79	.....
40	Tube		80	Arm	ENC1213

Mark No.	Description	Part No.
81	Screw	CBA1038
82	Arm	ENV1227
83	Spring	EBH1368
84	Arm	ENC1266
85	Spring	EBH1365
86	Lever	ENC1206
87	Spring	EBH1365
88	Lever	ENC1207
89	.....
90	Pinch Roller Unit	EXA1193
91	.....
92	Arm	ENC1264
93	Spring	EBH1367
94	Collar	ELA1267

22. PACKING METHOD

22.1 KEH-3200QR, KEH-3250QR, KEH-2200QR, KEH-2250QR

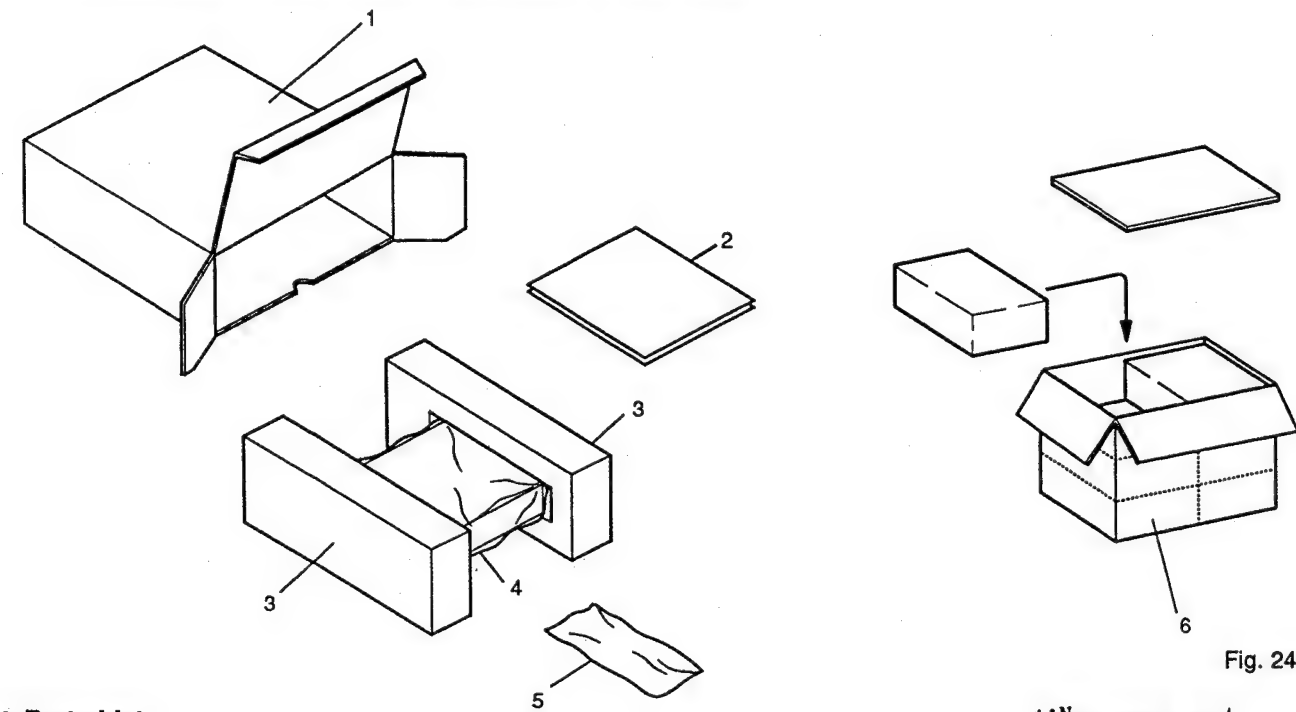


Fig. 24

● Parts List

*:Non spare part

Mark No.	Description	KEH-3200QR/UC	KEH-3250QR/ES	KEH-2200QR/UC	KEH-2250QR/ES
		Part No.	Part No.	Part No.	Part No.
1	Carton	CHG2110	CHG2112	CHG2111	CHG2113
2-1	Owner's Manual	CRD1534	CRD1535	CRD1534	CRD1535
2-2	Owner's Manual	CRB1238	.....	CRB1238	.....
* 2-3	Card	ARY1048	CRY-062	ARY1048	CRY-062
3	Styrofoam	CHP1413	CHP1413	CHP1413	CHP1413
4	Cover	CEG1113	CEG1113	CEG1113	CEG1113
5	Accessory Assy	CEA1584	CEA1584	CEA1584	CEA1584
6	Contain Box	CHL2110	* CHL2112	CHL2111	* CHL2113

5 Accessory Assy CEA1584		
Mark No.	Description	Part No.
5-1	Screw(×1)	CBA-102
5-2	Screw(×1)	CBA1002
5-3	Strap	CNF-111
5-4	Bush	CNV1009
5-5	Nut(×2)	NF50FMC
5-6	Shaft	CLP1064
* 5-7	Polyethylene Bag	CEG1011

2-1 Owner's Manual		
Part No.	Model	Language
CRD1534	KEH-3200QR/UC KEH-2200QR/UC	English, French
CRD1535	KEH-3250QR/ES KEH-2250QR/ES	English, French, Spanish, Arabic
CRB1238	KEH-3200QR/UC KEH-2200QR/UC	Spanish

22.2 KEH-1250

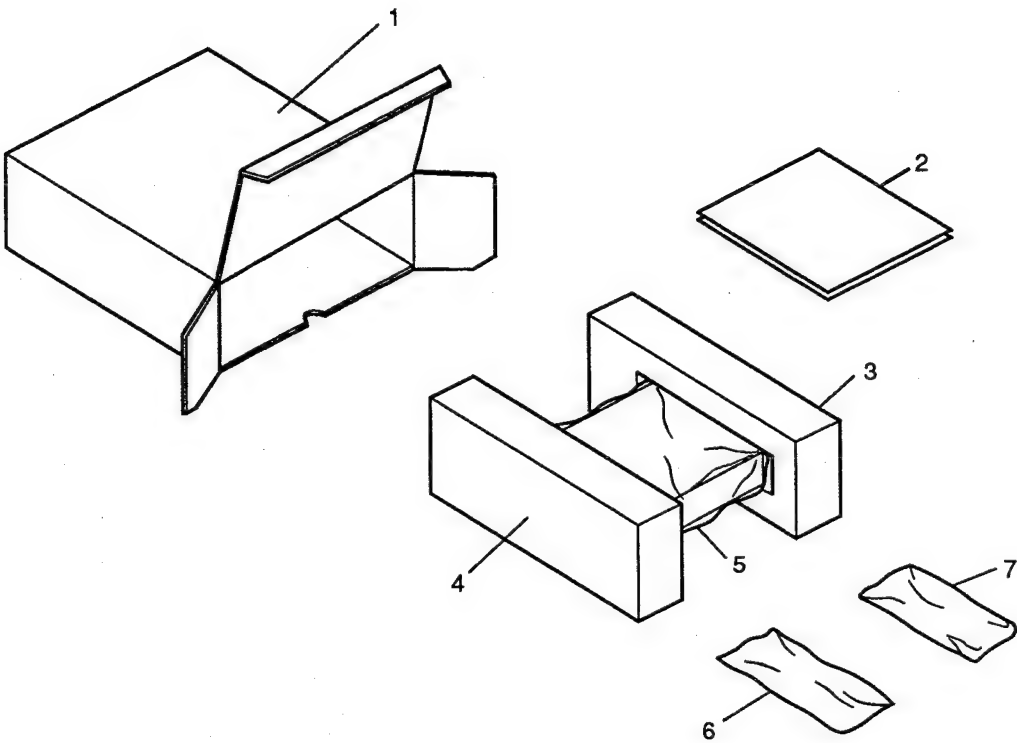


Fig. 25

● Parts List

*:Non spare part

Mark No.	Description	Part No.	Mark No.	Description	Part No.
1	Carton	CHG2114	6-2-1	Screw(×4)	BMZ40P080FMC
2	Owner's Manual (English, French, Spanish, Arabic)	CRD1536	6-2-2	Screw(×4)	BMZ50P080FMC
3	Styrofoam	CHP1275	6-2-3	Screw(×4)	CMZ50P080FMC
4	Styrofoam	CHP1276	6-2-4	Screw(×1)	HMF40P080FUC
5	Cover	CEG1113	* 6-2-5	Polyethylene Bag	CEG-127
6	Accessory Assy	CEA1320	* 6-3	Polyethylene Bag	E36-615
6-1	Cord	CDE1289	7	Cord Assy	CDE3167
* 6-2	Screw Assy	CEA1361			

23. ELECTRICAL PARTS LIST

NOTE:

- Parts whose parts numbers are omitted are subject to being not supplied.
- The part numbers shown below indicate chip components.

Chip Resistor

RS1/8S□□□□J, RS1/10S□□□□J

Chip Capacitor (except for CQS.....)

CKS....., CCS....., CSZS.....

● KEH-3200QR/UC, KEH-3250QR/ES

Tuner Amp Unit
Consists of
Tuner Amp P.C.Board
Volume P.C.Board
Dolby NR P.C.Board

Unit Number :

Unit Name : Tuner Amp Unit(KEH-3200QR/UC)

MISCELLANEOUS

==== Circuit Symbol & No. Part Name =====	Part No.
IC 1	LA1883M
IC 2	CWW1116
IC 251	LA3161P
IC 301	CXA1102P
IC 401	AN6263N
IC 451	NJM2068D
IC 551	TA8215H-A
IC 801	NJM2068D
IC 951	PD4275
Q 1	3SK195
Q 2	2SC2999
Q 3	2SA1309A
Q 151	2SC2412K
Q 152	DTA124EK
Q 153	DTC114EK
Q 201	2SK435
Q 202	2SC1740S
Q 251	2SD1992A
Q 301 401 402	XDC124ES
Q 303 304 451 452 453 454	2SC1740S
Q 455 456	DTC343TS
Q 457 458	DTC323TK
Q 459	DTA144TK
Q 460	DTC113ZS
Q 502	2SK330
Q 503 522	2SC1740S
Q 551	DTC114EK
Q 801	DTA144EK
Q 803 804	DTC323TK
Q 911	2SD1684
Q 912	2SA1150
Q 913	DTC143ES
Q 951	DTC113ZS
Q 952	XDA124ES
D 1	1SV128A-BB

==== Circuit Symbol & No. Part Name =====	Part No.
D 2 3 4 Variable Capacitance Diode	SVC203-AB
D 5	MA157-MR
D 151	HZS4R3EB3
D 201 202 203 204	1SS133
D 205 Variable Capacitance Diode	KV1235Z3
D 251	1SS133
D 252 911	HZS9R1JB2
D 451 452 453 454 456 458 459 462	1SS133
D 457	WG713
D 460	MA700
D 461	RD4R7JSB2
D 501	RD3R0ESB2
D 901	ERC04-02F
D 902	ERA15-02Y1
D 954 956 957 958 959	WG713
D 960 962 963	WG713
D 961	RD5R6JSB2
D 964	MA700
D 965	RD5R1JSB2
D 967	RD8R2JSB1
L 1 Inductor	CTF1065
L 2 Coil	CTC1022
L 3 Coil	CTC1020
L 4 Coil	CTC1056
L 5 OSC Coil	CTC1024
L 6 Inductor	LAU150K
L 201 Ferri-Inductor	LAU4R7K
L 202 Ferri-Inductor	LAU330K
L 203 Ferri-Inductor	CTF-161
L 951 Ferri-Inductor	LAU101K
T 1 Coil	CTC1064
T 51 Coil	CTC1071
T 201 Coil	CTB1056
T 202 Coil	CTB1008
T 203 204 Coil	CTB1058
T 205 Coil	CTE1041
T 206 Coil	CTE1042
T 210 Coil	CTB1061
CF 1 Ceramic Filter	CTF-182
CF 51 52 Ceramic Filter	CTF1130
CF201 Filter	CTF1085
H 1 Surge Protector	DSP-201M
X 151 Ceramic Resonator	CSS1066
X 951 Crystal Resonator	CSS1077
VR151 Semi-fixed 150kΩ(B)	VRMB6VS154

==== Circuit Symbol & No.	Part Name	==== Part No.
VR152	Semi-fixed 33kΩ(B)	VRMB6VS333
VR301 302	Semi-fixed 33kΩ(B)	VRMB6HS333
VR451 452	Volume 20kΩ(U)	CCS1164
VR453	Volume/Switch 20kΩ(B),50kΩ(G),200Ω	CCS1193
B 951	Battery	CEX1015

LCD

CAW1162

RESISTORS

==== Circuit Symbol & No.	Part Name	==== Part No.
R 1 3 5		RS1/10S223J
R 2		RD1/4PS151JL
R 4 159		RS1/10S333J
R 6		RD1/4PS473JL
R 8		RS1/10S563J
R 9		RD1/4PS563JL
R 10 157 160		RS1/10S103J
R 13		RD1/4PS271JL
R 14		RS1/10S561J
R 15		RS1/10S683J
R 16		RS1/10S474J
R 17		RS1/8S271J
R 18 51		RS1/10S331J
R 20 155		RS1/10S182J
R 21		RS1/10S101J
R 22		RS1/10S153J
R 23		RD1/4PS223JL
R 24		RD1/4PS682JL
R 25		RS1/10S472J
R 26		RD1/4PS103JL
R 27		RS1/10S510J
R 28 59		RS1/10S0R0J
R 52		RD1/4PS333JL
R 53		RD1/4PS104JL
R 54		RD1/4PS123JL
R 55 102 104		RS1/10S682J
R 56		RD1/4PS562JL
R 57		RS1/10S473J
R 58		RS1/10S513J
R 101		RS1/10S133J
R 103		RS1/10S183J
R 105		RS1/10S752J
R 153		RD1/4PS562JL
R 154		RS1/10S332J
R 156		RS1/10S684J
R 158		RS1/10S822J
R 201 202 211		RS1/10S103J
R 203		RD1/4PS513JL
R 204 219		RD1/4PS103JL
R 205		RS1/10S561J
R 210		RS1/10S473J
R 220		RD1/4PS752JL
R 221		RS1/10S104J
R 222		RD1/4PS220JL
R 223		RS1/10S472J
R 224		RS1/10S0R0J
R 251 252		RS1/10S513J
R 255 256		RS1/10S470J
R 257 258		RS1/10S472J
R 259 260		RS1/10S104J

==== Circuit Symbol & No.	Part Name	==== Part No.
R 262		RS1/10S222J
R 263		RS1/8S0R0J
R 264		RS1/10S0R0J
R 302		RS1/10S433J
R 303 304		RD1/4PS433JL
R 305 306		RD1/4PS153JL
R 307		RS1/10S473J
R 309		RD1/4PS472JL
R 310		RS1/10S221J
R 311 312		RD1/4PS272JL
R 313 314		RS1/10S332J
R 315 316		RS1/10S104J
R 401 402		RS1/10S822J
R 403		RS1/10S684J
R 404		RS1/10S510J
R 405		RD1/4PS103JL
R 407		RS1/10S0R0J
R 451 452 479		RS1/10S473J
R 453 454 465 466		RS1/10S331J
R 455		RD1/4PS182JL
R 456		RS1/10S182J
R 457		RD1/4PS222JL
R 458 477 478		RS1/10S222J
R 459 460		RS1/10S333J
R 461 462		RS1/10S474J
R 463 464		RS1/8S122J
R 467 468		RD1/4PS153JL
R 469 470		RS1/10S102J
R 471 472 475 476		RS1/10S123J
R 473 474		RS1/10S332J
R 480		RD1/4PS104JL
R 481		RD1/4PS222JL
R 482		RD1/4PS392JL
R 483 484		RS1/10S561J
R 487		RS1/10S0R0J
R 489		RS1/10S563J
R 490		RS1/10S0R0J
R 491		RS1/10S273J
R 492		RS1/8S0R0J
R 493		RS1/10S472J
R 501 955 966		RD1/4PS472JL
R 503 506		RD1/4PS102JL
R 504		RS1/10S472J
R 505		RD1/4PS152JL
R 551 552		RS1/10S332J
R 553 554		RS1/10S123J
R 555 556		RS1/10S471J
R 557 558 559 560		RD1/4PS4R7JL
R 561		RS1/10S102J
R 562		RD1/4PS222JL
R 801 805 806		RS1/10S392J
R 802		RS1/10S472J
R 803 804		RS1/10S223J
R 807 808 811 812		RS1/10S153J
R 809 810		RS1/10S751J
R 901		RD1/2PS3R3JL
R 911 964		RD1/4PS331JL
R 912		RD1/4PS221JL
R 913		RS1/10S103J
R 914 965		RS1/10S222J

==== Circuit Symbol & No. Part Name =====	Part No.	==== Circuit Symbol & No. Part Name =====	Part No.
R 951	RS1P151JL	C 224	CEA3R3M50LS
R 953	RS1/10S331J	C 225 232	CKSQYB473K25
R 956	RD1/4PS474JL	C 228	CEA220M16LS
R 959	RS1/10S223J	C 231	CQPA431G2A
R 960	RD1/4PS222JL	C 251 252	CKSQYB821K50
R 961	RD1/4PS333JL	C 253 254	CEA2R2M50LS2
R 962	RD1/4PS473JL	C 255	CEA470M10LS
R 963	RD1/4PS103JL	C 256	CEA470M10L2
R 967	RS1/10S0R0J	C 257 258	CKSQYB333K50
R 969	RS1/10S2R2J	C 261	CEA221M10L2
R 970	RS1/8S0R0J	C 262	CEA101M10L2
		C 301 302 303 304	CEA4R7M35LS
		C 305 306	CEAR68M50LS2
		C 307 308	CEA101M10LS
		C 310	CEA100M16LS2
CAPACITORS			
==== Circuit Symbol & No. Part Name =====	Part No.	==== Circuit Symbol & No. Part Name =====	Part No.
C 1 3 56	CCSQCH220J50	C 311 312	CKSQYB223K50
C 2 53 58	CKSQYF473Z50	C 401	CKSQYB103K50
C 4 25	CCSQCH330J50	C 402	CCSQCH330J50
C 5	CCSQTH090D50	C 403	CEA330M10LS
C 6	CCSQTH070D50	C 404	CEA0R1M50LS2
C 7	CKSQYB222K50	C 451 452 467 477	CEA100M16LS2
C 8 22 51 54 59 105 154	CKSQYB223K50	C 453 454	CEA0R1M50LS2
C 9	CCSQTH150J50	C 455 456	CEAR47M50LS2
C 10	CCSQSL271J50	C 457 458	CKSQYB153K50
C 11 19 101 164	CKSQYB103K50	C 459 460	CKSYB393K25
C 12 24	CCSQCH470J50	C 461 462	CEALNP2R2M35
C 13	CEA3R3M50LS	C 463 464	CEAR22M50L2
C 14	CKSQYB102K50	C 468	CEA010M50LS2
C 15	CCSQCH080D50	C 469 470	CCSQCH330J50
C 16	CCSQCH100D50	C 471 472	CEA4R7M35LS
C 17	CCSQCH330J50	C 473 474	CCSQCH101J50
C 18	CCSQCH150J50	C 475 476	CEA2R2M50LS2
C 20	CKSQYF104Z25	C 478	CEA470M10L2
C 21	CKSYB393K25	C 502	CKSQYB103K50
C 23	CKSYB393K25	C 503	CCH1005
C 27 52	CEA101M10LS		
C 55	CEA010M50LS2	C 551 552	CKSQYB102K50
C 57	CEAR47M50LS2	C 553 554	CEHAQ4R7M50
C 61	CKSYB473K50	C 555 556	CEHAQ470M25
C 102	CEA470M16LS	C 557 558 559 560	CFTNA224J50
C 103	CKSQYB182K50	C 561	CEHAQ220M50
C 104	CKSQYB682K50	C 562	CEHAQ101M10
C 106	CKSQYB222K50	C 801 802	CEA2R2M50LS2
C 151 152	CKSQYB223K50	C 803	CEA470M10L2
C 153	CKSQYB332K50	C 805 806	CCSQCH101J50
C 155 156 157	CEA010M50LS2	C 807 808	CEA100M16LS2
C 158	CEAR22M50LS2	C 901	CEHAQ472M16
C 159	CEA0R1M50LS2	C 902	CKSQYF473Z50
C 161	CEA100M16LS2	C 903	CEA102M16L2
C 162 163	CKSQYB152K50	C 911 913	CCH1128
C 201	CKSQYB103K50	C 912	CEA101M10LS
C 202	CKSQYB222K50	C 951 952	CCSQCH100D50
C 203	CCSQCH220J50	C 953	CKSQYF473Z50
C 204 216 227 229 230	CKSQYB223K50	C 954	CKSYB473K50
C 205 226	CKSQYF473Z50	C 955	CKDYF223Z50
C 206	CEA470M16LS	C 956	CEA331M6R3L2
C 207 209	CCSQTH090D50	C 959	CKSYB223K50
C 208	CCSQCH010C50		
C 217	CCSQRH820J50		
C 218	CCSQUJ180J50		
C 222	CEAR47M50LS2		

KEH-3200QR

Unit Number :
Unit Name : Key Board Unit

==== Circuit Symbol & No.	Part Name	==== Part No.
IL 901 902	Lamp14V40mA	CEL1191
IL 903	Lamp14V40mA	CEL1169

Unit Number :
Unit Name : P.C.Board(A)

==== Circuit Symbol & No.	Part Name	==== Part No.
S 2	Switch(FWD/REV)	ESH1003
D 1		1SR-35-100A

Unit Number :
Unit Name : P.C.Board(B)

==== Circuit Symbol & No.	Part Name	==== Part No.
S 3	Switch(TAPE/TUN)	ESH1004
S 4	Switch(MUTE)	CSN1005

Miscellaneous Parts List

==== Circuit Symbol & No.	Part Name	==== Part No.
S 1	Switch(MUTE)	ESH1005
M 1	Motor Unit	EXA1162
HD 1	Head Unit	EXA1163
SO 1	Solenoid	EXP1010

Tuner Amp Unit

	KEH-3200QR/UC	KEH-3250QR/ES
Circuit Symbol & No.	Part No.	Part No.
IC2	CWW1116	.....
D952,968	.....	WG713
D954	WG713	.....
R22	RS1/10S153J	RS1/10S223J
R23	RD1/4PS223JL	RD1/4PS472JL
R56	RD1/4PS562JL	RD1/4PS153JL
R467,468	RD1/4PS153JL	RD1/4PS562JL
C151,152	CKSQYB223K50	CKSQYB153J50

●KEH-2200QR/UC,KEH-2250QR/ES

Tuner Amp Unit
Consists of
Tuner Amp P.C.Board
Volume P.C.Board

Unit Number :
Unit Name : Tuner Amp Unit(KEH-2200QR/UC)

MISCELLANEOUS

==== Circuit Symbol & No. Part Name =====	Part No.
IC 1	LA1883M
IC 251	LA3161P
IC 451	NJM2068D
IC 551	TA8215H-A
IC 801	NJM2068D
IC 951	PD4275
Q 1	3SK195
Q 2	2SC2999
Q 3	2SA1309A
Q 151	2SC2412K
Q 152	DTA124EK
Q 153	DTC114EK
Q 201	2SK435
Q 202	2SC1740S
Q 251	2SD1992A
Q 451 452	2SC1740S
Q 453 454	2SC1740S
Q 455 456	DTC343TS
Q 457 458	DTC323TK
Q 459	DTA144TK
Q 460	DTC113ZS
Q 502	2SK330
Q 503 522	2SC1740S
Q 551	DTC114EK
Q 801	DTA144EK
Q 803 804	DTC323TK
Q 911	2SD1684
Q 912	2SA1150
Q 913	DTC143ES
Q 951	DTC113ZS
Q 952	XDA124ES
D 1	1SV128A-BB
D 2 3 4 Variable Capacitance Diode	SVC203-AB
D 5	MA157-MR
D 151	HZS4R3EB3
D 201 202 203 204	1SS133
D 205 Variable Capacitance Diode	KV1235Z3
D 251	1SS133
D 252 911	HZS9R1JB2
D 451 452 453 454 456 458 459 462	1SS133
D 457	1SS133
D 460	MA700
D 461	RD4R7JSB2
D 501	RD3R0ESB2
D 901	ERC04-02F
D 902	ERA15-02Y1
D 954	WG713
D 958 959 960 962 963	WG713
D 961	RD5R6JSB2
D 964	MA700
D 965	RD5R1JSB2

==== Circuit Symbol & No. Part Name =====	Part No.
D 967	RD8R2JSB1
L 1	Inductor
L 2	Coil
L 3	Coil
L 4	Coil
L 5	OSC Coil
L 6	Inductor
L 201	Ferri-Inductor
L 202	Ferri-Inductor
L 203	Ferri-Inductor
L 951	Ferri-Inductor
T 1	Coil
T 51	Coil
T 201	Coil
T 202	Coil
T 203 204	Coil
T 205	Coil
T 206	Coil
T 210	Coil
CF 1	Ceramic Filter
CF 51 52	Ceramic Filter
CF201	Filter
H 1	Surge Protector
X 151	Ceramic Resonator
X 951	Crystal Resonator
VR151	Semi-fixed 150kΩ(B)
VR152	Semi-fixed 33kΩ(B)
VR451 452	Volume 20kΩ(U)
VR453	20kΩ(B),50kΩ(G),200Ω
B 951	Battery
	LCD

RESISTORS

==== Circuit Symbol & No. Part Name =====	Part No.
R 1 3 5	RS1/10S223J
R 2	RD1/4PS151JL
R 4 159	RS1/10S333J
R 6	RD1/4PS473JL
R 8	RS1/10S563J
R 9	RD1/4PS563JL
R 10 157 160	RS1/10S103J
R 13	RD1/4PS271JL
R 14	RS1/10S561J
R 15	RS1/10S683J
R 16	RS1/10S474J
R 17	RS1/8S271J
R 18 51	RS1/10S331J
R 20 155	RS1/10S182J
R 21	RS1/10S101J
R 22	RS1/10S223J
R 23	RD1/4PS472JL
R 24	RD1/4PS682JL
R 25	RS1/10S472J
R 26	RD1/4PS103JL
R 27	RS1/10S510J
R 28 59	RS1/10S0R0J
R 52	RD1/4PS333JL
R 53	RD1/4PS104JL
R 54	RD1/4PS123JL

==== Circuit Symbol & No.	Part Name	==== Part No.	==== Circuit Symbol & No.	Part Name	==== Part No.
R 55 102 104		RS1/10S682J	R 557 558 559 560		RD1/4PS4R7JL
R 56		RD1/4PS562JL	R 561		RS1/10S102J
R 57		RS1/10S473J	R 562		RD1/4PS222JL
R 58		RS1/10S513J	R 801 805 806		RS1/10S392J
R 101		RS1/10S133J	R 802		RS1/10S472J
R 103		RS1/10S183J	R 803 804		RS1/10S223J
R 105		RS1/10S752J	R 807 808 811 812		RS1/10S153J
R 153		RD1/4PS562JL	R 809 810		RS1/10S751J
R 154		RS1/10S332J	R 901		RD1/2PS3R3JL
R 156		RS1/10S684J	R 911 964		RD1/4PS331JL
R 158		RS1/10S822J	R 912		RD1/4PS221JL
R 201 202 211		RS1/10S103J	R 913		RD1/10PS103J
R 203		RD1/4PS513JL	R 914 965		RS1/10S222J
R 204 219		RD1/4PS103JL	R 951		RS1P151JL
R 205		RS1/10S561J	R 953		RS1/10S331J
R 210		RS1/10S473J	R 956		RD1/4PS474JL
R 220		RD1/4PS752JL	R 959		RS1/10S223J
R 221		RS1/10S104J	R 960		RD1/4PS222JL
R 222		RD1/4PS220JL	R 961		RD1/4PS333JL
R 223		RS1/10S472J	R 962		RD1/4PS473JL
R 224		RS1/10S0R0J	R 963		RD1/4PS103JL
R 251 252		RS1/10S513J	R 967		RS1/10S0R0J
R 255 256		RS1/10S470J	R 969		RS1/10S2R2J
R 257 258		RS1/10S472J	R 970		RS1/8S0R0J
R 259 260		RS1/10S104J			
R 262		RS1/10S222J	CAPACITORS		
R 263		RS1/8S0R0J	==== Circuit Symbol & No.	Part Name	==== Part No.
R 264		RS1/10S0R0J	C 1 3 56		CCSQCH220J50
R 351 352 355		RD1/4PS102JL	C 2 53 58		CKSQYF473Z50
R 353 354		RD1/4PS153JL	C 4 25		CCSQCH330J50
R 451 452 479		RS1/10S473J	C 5		CCSQTH090D50
R 453 454 465 466		RS1/10S331J	C 6		CCSQTH070D50
R 455		RD1/4PS182JL	C 7		CKSQYB222K50
R 456		RS1/10S182J	C 8 22 51 54 59 105 154		CKSQYB223K50
R 457		RD1/4PS222JL	C 9		CCSQTH150J50
R 458 477 478		RS1/10S222J	C 10		CCSQSL271J50
R 459 460		RS1/10S333J	C 11 19 101 164		CKSQYB103K50
R 461 462		RS1/10S474J	C 12 24		CCSQCH470J50
R 463 464		RS1/8S122J	C 13		CEA3R3M50LS
R 467 468		RD1/4PS153JL	C 14		CKSQYB102K50
R 469 470		RS1/10S102J	C 15		CCSQCH080D50
R 471 472 475 476		RS1/10S123J	C 16		CCSQCH100D50
R 473 474		RS1/10S332J	C 17		CCSQCH330J50
R 480		RD1/4PS104JL	C 18		CCSQCH150J50
R 481		RD1/4PS222JL	C 20		CKSQYF104Z25
R 482		RD1/4PS392JL	C 21 23		CKSYB393K25
R 483 484		RS1/10S561J	C 27 52		CEA101M10LS
R 487		RS1/10S0R0J	C 55		CEA010M50LS2
R 489		RS1/10S563J	C 57		CEAR47M50LS2
R 490		RS1/10S0R0J	C 61		CKSYB473K50
R 491		RS1/10S273J	C 102		CEA470M16LS
R 492		RS1/8S0R0J	C 103		CKSQYB182K50
R 493		RS1/10S472J	C 104		CKSQYB682K50
R 501 955 966		RD1/4PS472JL	C 106		CKSQYB222K50
R 503 506		RD1/4PS102JL	C 151 152		CKSQYB223K50
R 504		RS1/10S472J	C 153		CKSQYB332K50
R 505		RD1/4PS152JL	C 155 156 157		CEA010M50LS2
R 551 552		RS1/10S332J	C 158		CEAR22M50LS2
R 553 554		RS1/10S123J	C 159		CEA0R1M50LS2
R 555 556		RS1/10S471J	C 161		CEA100M16LS2
			C 162 163		CKSQYB152K50
			C 201		CKSQYB103K50
			C 202		CKSQYB222K50

==== Circuit Symbol & No.	Part Name	==== Part No.
C 203		CCSQCH220J50
C 204 216 227 229 230		CKSQYB223K50
C 205 226		CKSQYF473Z50
C 206		CEA470M16LS
C 207 209		CCSQTH090D50
C 208		CCSQCH010C50
C 217		CCSQRH820J50
C 218		CCSQJ180J50
C 222		CEAR47M50LS2
C 224		CEA3R3M50LS
C 225 232		CKSQYB473K25
C 228		CEA220M16LS
C 231		CQPA431G2A
C 251 252		CKSQYB821K50
C 253 254		CEA2R2M50LS2
C 255		CEA470M10LS
C 256		CEA470M10L2
C 257 258		CKSQYB333K50
C 261		CEA221M10L2
C 262		CEA101M10L2
C 351 352		CEA100M16L2
C 353		CEA4R7M35L2
C 451 452 467 477		CEA100M16LS2
C 453 454		CEA0R1M50LS2
C 455 456		CEAR47M50LS2
C 457 458		CKSQYB153K50
C 459 460		CKSYB393K25
C 461 462		CEALNP2R2M35
C 463 464		CEAR22M50L2
C 468		CEA010M50LS2
C 471 472		CEA4R7M35LS
C 469 470		CCSQCH330J50
C 473 474		CCSQCH101J50
C 475 476		CEA2R2M50LS2
C 478		CEA470M10L2
C 502		CKSQYB103K50
C 503	4.7 μ F/16V	CCH1005
C 551 552		CKSQYB102K50
C 553 554		CEHAQ4R7M50
C 555 556		CEHAQ470M25
C 557 558 559 560		CFTNA224J50
C 561		CEHAQ220M50
C 562		CEHAQ101M10
C 801 802		CEA2R2M50LS2
C 803		CEA470M10L2
C 805 806		CCSQCH101J50
C 807 808		CEA100M16LS2
C 901		CEHAQ472M16
C 902		CKSQYF473Z50
C 903		CEA102M16L2
C 911 913	330 μ F/10V	CCH1128
C 912		CEA101M10LS
C 951 952		CCSQCH100D50
C 953		CKSQYF473Z50
C 954		CKSYB473K50
C 955		CKDYF223Z50
C 956		CEA331M6R3L2
C 959		CKSYB223K50

Unit Number :
Unit Name : Key Board Unit

==== Circuit Symbol & No.	Part Name	==== Part No.
IL 901 902	Lamp 14v40mA	CEL1191
IL 903	Lamp 14v40mA	CEL1169

Unit Number :
Unit Name : P.C.Board(A)

==== Circuit Symbol & No.	Part Name	==== Part No.
S 2	Switch(FWD/REV)	ESH1003

Unit Number :
Unit Name : P.C.Board(B)

==== Circuit Symbol & No.	Part Name	==== Part No.
S 3	Switch(TAPE/TUN)	ESH1004
S 4	Switch(MUTE)	CSN1005

Miscellaneous Parts List

==== Circuit Symbol & No.	Part Name	==== Part No.
S 1	Switch(MUTE)	ESN1005
M 1	Motor Unit	EXA1162
HD 1	Head Unit	EXA1163

Tuner Amp Unit

	KEH-2200QR/UC	KEH-2250QR/ES
Circuit Symbol & No.	PartNo.	PartNo.
IC801	NJM2068D	.....
Q453,454	2SC1740S	.....
Q801	DTA144EK	.....
Q803,804	DTC323TK	.....
D457	1SS133	WG713
D460	MA700	.....
D952,968	.....	WG713
VR453	CCS1193	CCS1194
R56	RD1/4PS562JL	RD1/4PS153JL
R467,468	RD1/4PS153JL	RD1/4PS562JL
R489	RS1/10S563J	.....
R491	RS1/10S273J	.....
R801,805,806	RS1/10S392J	.....
R802	RS1/10S472J	.....
R803,804	RS1/10S223J	.....
R807,808,811,812	RS1/10S153J	.....
R809,810	RS1/10S751J	.....
C151,152	CKSQYB223K50	CKSQYB153K50
C477	CEA100M16LS2	.....
C801,802	CEA2R2M50LS2	.....
C803	CEA470M10L2	.....
C805,806	CCSQCH101J50	.....
C807,808	CEA100M16LS2	.....

●KEH-1250/ES

Tuner Amp Unit
Consists of Tuner Amp P.C.Board Volume P.C.Board

Unit Number :
Unit Name : Tuner Amp Unit

MISCELLANEOUS

==== Circuit Symbol & No. Part Name =====	Part No.
IC 1	LA1883M
IC 251	LA3161P
IC 451	NJM2068D
IC 551	TA8215H-A
IC 951	PD4275
Q 1	3SK195
Q 2	2SC2999
Q 3	2SA1309A
Q 151	2SC2412K
Q 152	DTA124EK
Q 153	DTC114EK
Q 201	2SK435
Q 202	2SC1740S
Q 251	2SD1992A
Q 455 456	DTC343TS
Q 457 458	DTC323TK
Q 459	DTA144TK
Q 460	DTC113ZS
Q 502	2SK330
Q 503 522	2SC1740S
Q 551	DTC114EK
Q 911	2SD1684
Q 912	2SA1150
Q 913	DTC143ES
Q 951	DTC113ZS
Q 952	XDA124ES
D 1	1SV128A-BB
D 2 3 4	Variable Capacitance Diode SVC203-AB
D 5	MA157-MR
D 151	HZS4R3EB3
D 201 202 203 204	1SS133
D 205	KV1235Z3
D 251	1SS133
D 252 911	HZS9R1JB2
D 451 452 453 454 456 457 458 459 462	1SS133
D 461	RD4R7JSB2
D 501	RD3R0ESB2
D 901	ERC04-02F
D 902 903	ERA15-02VH
D 952 968	WG713
D 958 959 960 962 963	WG713
D 961	RD5R6JSB2
D 965	RD5R1JSB2
D 967	RD8R2JSB1
L 1	Inductor CTF1065
L 2	Coil CTC1022
L 3	Coil CTC1020
L 4	Coil CTC1056
L 5	OSC Coil CTC1024
L 6	Inductor LAU150K

==== Circuit Symbol & No. Part Name =====	Part No.
L 201	Ferri-Inductor LAU4R7K
L 202	Ferri-Inductor LAU330K
L 203	Ferri-Inductor CTF-161
L 951	Ferri-Inductor LAU101K
T 1	Coil CTC1064
T 51	Coil CTC1071
T 201	Coil CTB1056
T 202	Coil CTB1008
T 203 204	Coil CTB1058
T 205	Coil CTE1041
T 206	Coil CTE1042
T 210	Coil CTB1061
CF 1	Ceramic Filter CTF-182
CF 51 52	Ceramic Filter CTF1130
CF201	Filter CTF1085
H 1	Surge Protector DSP-201M
X 151	Ceramic Resonator CSS1066
X 951	Crystal Resonator CSS1077
VR151	Semi-fixed 150kΩ(B) VRMB6VS154
VR152	Semi-fixed 33kΩ(B) VRMB6VS333
VR451	Volume 20kΩ(A) CCS1166
VR452	Volume 50kΩ(G) CCS1165
VR453	Volume/Switch20kΩ(B),200Ω LCD CCS1195
	CAW1162

RESISTORS

==== Circuit Symbol & No. Part Name =====	Part No.
R 1 3 5	RS1/10S223J
R 2	RD1/4PS151JL
R 4 159	RS1/10S333J
R 6	RD1/4PS473JL
R 8	RS1/10S563J
R 9	RD1/4PS563JL
R 10	RS1/10S823J
R 13	RD1/4PS271JL
R 14	RS1/10S561J
R 16	RS1/10S474J
R 17	RS1/8S271J
R 18 51	RS1/10S331J
R 20 155	RS1/10S182J
R 21	RS1/10S101J
R 22	RS1/10S223J
R 23	RD1/4PS472JL
R 24	RD1/4PS682JL
R 25	RS1/10S472J
R 26	RD1/4PS103JL
R 27	RS1/10S510J
R 28 59	RS1/10S0R0J
R 52	RD1/4PS333JL
R 53	RD1/4PS104JL
R 54	RD1/4PS123JL
R 55 102 104	RS1/10S682J
R 56	RD1/4PS153JL
R 57	RS1/10S473J
R 58	RS1/10S513J
R 101	RS1/10S133J
R 103	RS1/10S183J
R 105	RS1/10S752J
R 153	RD1/4PS562JL
R 154	RS1/10S332J
R 156	RS1/10S684J
R 157 160 201 202 211	RS1/10S103J

==== Circuit Symbol & No. Part Name =====	Part No.	CAPACITORS	==== Circuit Symbol & No. Part Name =====	Part No.
R 158	RS1/10S822J			
R 203	RD1/4PS513JL			
R 204 219	RD1/4PS103JL	C 1 3 56		CCSQCH220J50
R 205	RS1/10S561J	C 2 53 58		CKSQYF473Z50
R 210	RS1/10S473J	C 4 25		CCSQCH330J50
		C 5		CCSQTH090D50
		C 6		CCSQTH070D50
R 220	RD1/4PS752JL			
R 221	RS1/10S104J	C 7		CKSQYB222K50
R 222	RD1/4PS220JL	C 8 22 51 54 59 105 154		CKSQYB223K50
R 223	RS1/10S472J	C 9		CCSQTH150J50
R 251 252	RS1/10S513J	C 10		CCSQL271J50
		C 11 19 101 164		CKSQYB103K50
R 255 256	RS1/10S470J			
R 257 258	RS1/10S472J	C 12 24		CCSQCH470J50
R 259 260	RS1/10S104J	C 13		CEA3R3M50LS
R 262	RS1/10S222J	C 14		CKSQYB102K50
R 263	RS1/8S0R0J	C 15		CCSQCH080D50
		C 16		CCSQCH100D50
R 264	RS1/10S0R0J	C 17		CCSQCH330J50
R 351 352	RD1/4PS562JL			
R 353 354	RD1/4PS153JL	C 18		CCSQCH150J50
R 355	RD1/4PS102JL	C 20		CKSQYF104Z25
R 453 454	RS1/10S272J	C 21		CKSYB393K25
		C 23		CKSYB223K25
R 456	RS1/10S0R0J	C 27 52		CEA101M10LS
R 477 478	RS1/10S222J			
R 459 460	RS1/10S333J	C 55		CEA101M50LS2
R 461 462	RS1/10S0R0J	C 57		CEAR47M50LS2
R 467 468	RD1/4PS103JL	C 61		CKSYB473K50
		C 102		CEA470M16LS
R 469 470	RS1/10S102J	C 103		CKSQYB182K50
R 471 472	RS1/10S473J			
R 473 474	RS1/10S242J	C 104		CKSQYB682K50
R 475 476	RS1/10S123J	C 106		CKSQYB222K50
R 479	RS1/10S473J	C 151 152		CKSQYB153K50
		C 153		CKSQYB332K50
R 480	RD1/4PS104JL	C 155 156 157		CEA010M50LS2
R 481	RD1/4PS222JL			
R 482	RD1/4PS392JL	C 158		CEAR22M50LS2
R 490	RS1/8S0R0J	C 159		CEA0R1M50LS2
R 492	RS1/8S0R0J	C 161		CEA100M16LS2
		C 162 163		CKSQYB152K50
R 493	RS1/10S472J	C 201		CKSQYB103K50
R 494 495 496 497 499	RS1/10S0R0J			
R 501 955 966	RD1/4PS472JL	C 202		CKSQYB222K50
R 503 506	RD1/4PS102JL	C 203		CCSQCH220J50
R 504	RS1/10S472J	C 204 216 227 229 230		CKSQYB223K50
		C 205 226		CKSQYF473Z50
R 505	RD1/4PS152JL	C 206		CEA470M16LS
R 551 552	RS1/10S102J			
R 553 554	RS1/10S123J	C 207 209		CCSQTH090D50
R 555 556	RS1/10S471J	C 208		CCSQCH010C50
R 557 558 559 560	RD1/4PS4R7JL	C 217		CCSQRH820J50
		C 218		CCSQJ180J50
R 561	RS1/10S102J	C 222		CEAR47M50LS2
R 562	RD1/4PS222JL			
R 901	RD1/2PS3R3JL			
R 911 964	RD1/4PS331JL	C 224		CEA3R3M50LS
R 912	RD1/4PS221JL	C 225 232		CKSQYB473K25
		C 228		CEA220M16LS
R 913	RS1/10S103J	C 231		CQPA431G2A
R 914 965	RS1/10S222J	C 251 252		CKSQYB821K50
R 951	RS1P151JL			
R 956	RD1/4PS474JL	C 253 254		CEA2R2M50LS2
R 959	RS1/10S223J	C 255		CEA470M10LS
		C 256		CEA470M10L2
R 960	RD1/4PS222JL	C 257 258		CKSQYB333K50
R 961	RD1/4PS333JL	C 261		CEA221M10L2
R 962	RD1/4PS473JL			
R 963	RD1/4PS103JL	C 262		CEA101M10L2
R 968	RD1/4PS122JL	C 351 352		CEA100M16L2
		C 353		CEA4R7M35LS
R 969	RS1/10S2R2J	C 461 462		CEALNP2R2M35
		C 463 464		CEAR22M50L2

==== Circuit Symbol & No. Part Name =====	Part No.
C 465 466	CKSQYB473K25
C 467	CEA100M16LS2
C 468	CEA010M50LS2
C 471 472	CEA4R7M35LS
C 473 474	CCSQCH101J50
C 475 476	CEA2R2M50LS2
C 478	CEA470M10L2
C 502	CKSQYB103K50
C 503	CCH1005
C 551 552	CKSQYB102K50
C 553 554	CEHAQ4R7M50
C 555 556	CEHAQ470M25
C 557 558 559 560	CFTNA224J50
C 561	CEHAQ220M50
C 562	CEHAQ101M10
C 901	CEHAQ472M16
C 902	CKSQYF473Z50
C 903	CEA102M16L2
C 911 913	CCH1128
C 912	CEA101M10LS
C 951 952	CCSQCH100D50
C 953	CKSQYF473Z50
C 954	CKSYB473K50
C 955	CKDYF223Z50
C 956	CEA331M6R3L2
C 959	CKSYB223K50

Unit Number :
Unit Name : Key Board Unit

==== Circuit Symbol & No. Part Name =====	Part No.
IL 901 902	Lamp 14v40mA CEL1191
IL 903	Lamp 14v40mA CEL1169

Unit Number :
Unit Name : P.C.Board(A)

==== Circuit Symbol & No. Part Name =====	Part No.
S 2	Switch(FWD/REV) ESH1003

Unit Number :
Unit Name : P.C.Board(B)

==== Circuit Symbol & No. Part Name =====	Part No.
S 3	Switch(TAPE/TUN) ESH1004
S 4	Switch(MUTE) CSN1005

Miscellaneous Parts List

==== Circuit Symbol & No. Part Name =====	Part No.
S 1	Switch(MUTE) ESN1005
M 1	Motor Unit EXA1162
HD 1	Head Unit EXA1163